Presa Universitară Clujeană

How to achieve digital well-being in universities

Tackling teachers' technostress through mentoring

Digital Well-being in Higher Education – Erasmus + (2021-1-RO01-KA220-HED-000032023)

Cazan Ana-Maria • David Laura Teodora
Galgenmüller Christian • Gudevold Eirin
Hakkarainen Louna • Henter Ramona
Maican Catalin Ioan • Nastasa Laura Elena
Nummela Niko • Rosnes Arne Morten • Truta Camelia
Tungland Tobias • Unz Dagmar • Vesterinen Olli

How to achieve digital well-being in universities

Tackling teachers' technostress
through mentoring

Presa Universitară Clujeană
2024

Referenţi ştiinţifici
Conf. dr. Daniela-Veronica Necșoi
Conf. dr. Maria Magdalena Stan

ISBN 978-606-37-2174-8

Universitatea Babeş-Bolyai
Presa Universitară Clujeană
Director: Codruţa Săcelean
Str. Hasdeu nr. 51
400371 Cluj-Napoca, România
Tel./fax: (+40)-264-597.401
E-mail: editura@editura.ubbcluj.ro
http://www.editura.ubbcluj.ro/

Authors

Cazan Ana-Maria, Transilvania University of Brasov
David Laura Teodora, Transilvania University of Brasov
Galgenmüller Christian, Technical University of Applied Sciences Wuerzburg-Schweinfurt
Gudevold Eirin, VID Specialized University
Hakkarainen Louna, Diaconia University of Applied Sciences
Henter Ramona, Transilvania University of Brasov
Maican Catalin Ioan, Transilvania University of Brasov
Nastasa Laura Elena, Transilvania University of Brasov
Nummela Niko, Diaconia University of Applied Sciences
Rosnes Arne Morten, VID Specialized University
Truta Camelia, Transilvania University of Brasov
Tungland Tobias, VID Specialized University
Unz Dagmar, Technical University of Applied Sciences Wuerzburg-Schweinfurt
Vesterinen Olli, Haaga-Helia University of Applied Sciences

About the project

- **Name:** Digital Wellbeing in Higher Education (DIGIWELL)
- **Duration:** 1.2.2022–1.5.2024
- **Funding:** KA220-HED – Cooperation partnerships in higher education
- **Website:** https://digi-well.unitbv.ro/
- **Project partners:**

Transilvania University of Brașov, Romania (UNITBV)
Diaconia University of Applied Sciences (Diak)
VID Specialized University
Technical University of Applied Sciences Wuerzburg-Schweinfurt (THWS)

DIGIWELL

Transilvania University of Brasov · Diak · VID · thws

Table of contents

1

Introduction

1 Introduction

Technologies have become part of our daily lives in such a manner that it is difficult to consider living without them. Rapidly evolving technologies create many surprising changes to our private and work lives. Novel words such as wireless, browsing, downloading, and uploading, blogging, networking, cyberspace, hyperlink, VR, or old ones that expanded their meaning such as cloud, cookie, file, firewall entered our vocabulary and are now considered to be common knowledge. We are talking about generations like Gen Z or digital native to refer to those born after the year 2000 and who have witnessed technology advance faster than ever. Efforts are being made to understand the consequences of such development and to anticipate appropriate paths to support progress.

1.1. DIGIWELL – a toolbox to improve digital well-being of university teachers

This workbook has been created as a part of EU-funded Digital Well-being in Higher Education (DIGIWELL) project, which seeks to improve university teachers' digital well-being through capacity building and mentoring.

The project idea emerged during covid pandemic, which forced teachers in universities and elsewhere to transfer to emergency remote teaching suddenly and unexpectedly. Questions related to technology's possibilities but also drawbacks arose. DIGIWELL project was born out of observed need to develop tools and methods to improve university teachers' well-being in relation to their work and technology.

This workbook contains theoretical knowledge about well-being, work engagement, and technostress, as well as exercises and instructions for activities which can be applied into practice in the context of the DIGIWELL mentoring program. In addition, the reader will be presented case studies, discussion guidelines, self-assessment tools and other resources that can be utilised in improving digital well-being in universities.

The DIGIWELL mentoring and peer learning toolbox consists of this 1) workbook, which contains instructions to set up a mentoring program in universities and explains the theoretical background behind digital well-being and mentoring as a method, 2) a booklet which contains more condensed and practical info to utilise during mentoring, and 3) an online course that can be used as a self-learning tool or as a part of the mentoring program.

THE DIGIWELL PROJECT AIMS TO...

1) To raise the awareness in higher education institutions (HEIs) about the need to implement strategies to increase well-being of teachers.

2) Provide tools for teachers to support both work engagement and learning engagement as well as their digital well-being and resilience.

3) Develop teachers' digital competences in the context of the emerging trend of integrating technologies in teaching and learning.

In a nutshell, the concept of digital well-being in this workbook refers to positive as well as negative effects of technology to an individual. In the context of everyday life this can relate to phenomena like monitoring screentime, hate speech, negative effects of social media, or blurring boundaries of private and public life or added well-being through increased connectivity to family members and friends. Nevertheless, the DIGIWELL project focuses on digital well-being in the context of work life in universities.

One way to define digital well-being is to see it as "a subjective individual experience of optimal balance between the benefits and

drawbacks obtained from mobile connectivity. This experiential state is comprised of affective and cognitive appraisals of the integration of digital connectivity into ordinary life." (Vanden Abeele, 2021, p. 938). A theory of dynamic system of digital well-being by Abeele (2021) stresses the balance between connectivity and dysconnectivity, and experiences that arise out of interactions between persons, devices, and contexts. (Vanden Abeele, 2021, p. 946) Büchi (2021, p. 4) describes digital well-being as concerning "individuals' affect (e.g., positive emotions), domain satisfaction (e.g., one's relationships or job), and overall life satisfaction in a social environment characterised by the constant abundance of digital media use options."

The workbook can be used by academic and non-academic staff from universities in order to understand more about the topic of digitalisation as an ongoing process with multiple consequences in professional and personal life, and well-being including how it is defined and what factors have an impact on it, digital competences and teaching methods in current university teachers' working environment.

How to utilise the DIGIWELL toolbox?

The workbook can be taken as a manual with theories, definitions and classifications related to well-being alongside with examples and case studies that seek to support for mentoring activities. The workbook aims to increase understanding of the impacts of technology use in professional activities and how it interferes with well-being.

The booklet is a "pocket" tool that allows you to retrieve useful information briefly. It is concise and focuses on guiding self-assessment or inter evaluation of digital well-being as well as brief recommendation meant to help to improve the level digital well-being. It can be used by mentors in their interaction with mentees or as a self-help guidebook by anyone interested to improve their own quality of (working) life.

The online course helps people to find information about the same topic, this time having the opportunity not only to read materials, but also to watch relevant videos, to test exercises and to select content applicable to their own activities.

Structure of the workbook

- **The first chapter** explains the concept of digital transformation and how technological change affected the way we work on a more general level.

- **Chapter two** focuses on digitalisation of higher education on a more general level. It looks at the impacts of digitalisation in higher education institutions and its influence on teaching and learning. The reader is introduced to online, blended, and hybrid learning requirements and to digital competences needed to be mastered by a skilled teacher.

- **Chapter three** presents the central concept of the book – well-being – and explains how it relates to work engagement. It also analyses pros and cons of technology use by revealing research results on technostress, IT resilience and digital competencies of teachers and students alike.

- **Chapter four** presents practical ways to set up a mentoring program and offers sample of interventions that are meant to reduce technostress and increase digital competences of academic professionals. The chapter goes more into practical knowledge on the subject and links the workbook with other resources available for potential mentors or university professionals.

- **Chapter five** presents concluding remarks.

1.2. Digitisation, digitalisation, and digital transformation

Many have highlighted the fact that technology moves forward a lot faster than the knowledge that attempts to delineate theory or to explain its consequences at socio-economic levels. Such difficulties are related to challenges in defining digitalisation – a concept upon which there is still debate (Brennen & Kreiss, 2016; Bloomberg, 2018).

In the last five to ten years, scholars have made several attempts to review literature to collect relevant knowledge on digitalisation and different perspectives that have reached consent (Kraus et al., 2021; Parviainen et al., 2022; Plekhanov, Franke & Netland, 2022; Reis et al., 2020).

Three interlinked concepts related to technological change have been defined and elaborated: digitisation, digitalisation, and digital transformation. The term digitisation has already been defined since the mid-1950's and it refers to the conversion of analogue data into digital form using the binary number zeros and ones. It can be considered as the "father" of the concept of digitalisation, which can be seen as a process of implementing and using digitalised information. Digitisation is a process that has both symbolic and material dimensions. We can debate how objective, or material digital information is compared to the analogue version of the same information (such as a paper photograph versus a digital photo, a book versus an audio book, a map versus a navigation app such as google earth, or tangible money versus a bank card), but at some extent the digitalised version still has a material interface. That is why digitalisation refers to the process of using digital information and digital technologies and is less about material forms of objects or relations between objects and people. Digitalisation has come to broadly refer to the structuring of many and diverse domains of social life around digital communication and media infrastructures. So, a broader definition is given by Brennen & Kreiss (2016, p. 1), and to them digitalisation refers to "the adoption or increase in use of digital or computer technology by an organisation, industry, country, etc."

Digitalisation is also described as the transformation of existing socio-technical structures that were previously mediated by non-digital artefacts or transformation of relationships into ones that are mediated by digitised artefacts and relationships with newly embedded digital capabilities (Thorseng & Griot cited by Reis et al., 2020).

Digitalisation "represents the integration of multiple technologies into all aspects of daily life that can be digitized" (Gray & Rumpe, 2015, p. 1319). Examples offered by the authors are smart homes and smart cities, also transferring fragile artefacts into digital forms, and Big Data analysis that facilitate prediction and explicative models to emerge.

> THREE INTERLINKED CONCEPTS RELATED TO TECHNOLOGICAL CHANGE HAVE BEEN DEFINED AND ELABORATED: **DIGITISATION, DIGITALISATION, AND DIGITAL TRANSFORMATION.**

Another definition is provided by Legner et al. (2017), who describe digitalisation as "the manifold sociotechnical phenomena and processes of adopting and using (...) [digital] technologies in broader individual, organizational, and societal contexts" (p. 301). According to these scholars, digitalisation is distinguishable from digitisation, which refers to the technical process of transforming analogue signals into digital ones.

Digital transformation is considered by some experts to describe the changes that companies need to make in order to implement digitalisation, especially strategies and organisational changes (Bloomberg, 2018). Parviainen, et al. (2022) see digital transformation related with four levels of change:

- process level (that implies changing from manual work or manual manipulation of objects to digital tools),
- organisation level (changing from old practices to up-to-date services),
- business domain level (changing roles and values in ecosystems) and
- society level (changing society structure).

Digital transformation also entails internal efficiency (increased quality of products or services, improved efficiency in production or processes, better management of resources, monitorisation of process and results, improved accuracy and so on). A second viewpoint that digital transformation can be tackled is by looking at the *external opportunities*: surpassing competition by introducing digital technologies, collaborate to and integrate other business models, improving visibility or extending the market. A third dimension that is also directly connected to digital transformation is *disruption*, which refers to financial costs, the continuous upgrading of technologies, becoming overly dependent on specific platforms or apps, changes in human resources characteristics (people being fired or being constantly tested for digital skills), lack of demand, being overrun by competition, and examples may continue.

There are benefits and opportunities in digital transformation no doubt, but there are also costs and losses. Regardless of the level of analysis, digital transformation usually starts with analysing the current state of technologies and available resources, moves to defining the new goal and the necessary steps to be reached and finally advances to acting on the plan and starting the implementation of change.

1.3. Digital technologies at the workplace

Digital competitiveness ranking is an index calculated as a combination of the quality of education and science in countries, the development of Internet and communication technologies, financial capital in the IT industry, as well as the regulatory environment and the level of readiness to use digital transformation. In a recent study, digital competitiveness ranking was associated with perceived happiness and human development index in 61 countries. The results support the conclusion that digitalisation is a significant contributor in improved quality of life, moderate to high correlation being measured between digital competitiveness ranking of the country and the earlier mentioned criteria for well-being (happiness and human development index). The authors asserted that regulations, policy measures and conditions of digitalisation along with social-economic factors, are also good predictors of well-being besides digitalisation itself (Fzi, Gring & Szendrei-Pl, 2022; Kryzhanovskij, Baburina & Ljovkina, 2021).

The European Agency for Safety and Health at Work (EU-OSHA) commissioned a Flash Eurobarometer in April 2022 with the aim of collecting data on the use of digital technologies at the workplace, physical and mental health of employees and their perception on how occupational safety and health was managed at their workplace (OSH Pulse, 2022).

Data was collected from all EU countries, plus Norway and Iceland, from more than 27 000 participants. Across all countries, 89 percent of respondents replied that they use at least one of the digital devices listed in the survey (laptops, tablets, smartphones and other portable devices; desktop computers, broadband technology to access the Internet, followed by wearable devices such as smart watches, smart glasses, activity trackers or other [embedded] sensors). Digital devices are also used by all type of businesses and sectors of economic activity. 52 percent of respondents across the EU answered that the use of digital technologies in their workplace determines the speed or pace of their work and 33 percent stated that these technologies increase their workload. Other occupational and health related risks introduced using technology and identified in the study are *solitary work* – over four in ten respondents (44%) say that digital technology results in them working alone; 19% of respondents mentioned *reduced autonomy*; and almost four in ten respondents (37%) felt that the use of digital technologies *increases surveillance* of them at work.

From this broad view of digitalisation and its' consequences on people's health at their workplace a narrower perspective but closer to the purpose of the project is to look at the impact of digitalisation in higher education institutions.

As probably expected, higher education intuitions (HEI) must be a driving force in

everything that means innovation, advance in science, modern technologies, and positive change. But it is impossible to refer to HEIs in integrum and to consider them only from the angle of the final desirable output without weighing up all dimensions and factors that are involved in HEI as complex organisations strongly entangled in life of society. COVID-19 pandemic was perceived in many HEIs as an earthquake which shook the existing ways of teaching and learning and imposed rapid transformation especially in adopting digitalisation in a fast forward manner. It wasn't easy, and questions were raised about how digital transformation can be implemented most successfully. Teachers, students, and management representatives in HEIs are no strangers to digital tools (computer-mediated communication, interactive whiteboards, apps) or learning management systems (Moodle, Blackboard), but the willingness to use them and the efficacy of the results are still under scrutiny.

In the post-COVID world digitalisation in higher education institutions has become a subject of controversy. There were those who embraced online classes and all sorts of digital tools used for teaching and learning and those who mostly focused on shortcomings and negative physical and mental health effects and pleaded for reducing digital tools to the minimum (Fűzi, Géring & Szendrei-Pál, 2022).

Research exploring perspectives on digitalisation in HEIs after the year 2020 and the quarantine period, came across a recent expectation formulated by teachers and students alike, naming it "holistic well-being" (Kryzhanovskij, Baburina & Ljovkina, 2021). By this term, respondents imply that physical/emotional/mental/social well-being is a condition, which must be satisfied along with digitalisation immersion in HEI culture. Without being concerned and sensitive to the effects of digitalisation on well-being, no steps into the future are believed to deserve the costs.

Negative effects go beyond the risks on well-being. Lack of infrastructure, financial costs of the devices, lack of digital competences, lack of time to keep oneself updated to new developments in IT are only some of them. Not to mention intrusion of technology in the privacy of life (with all the options of location and activity logs registered in real time) or the new forms of cheating at exams, that students came up with and that took the unprepared evaluators by surprise (Fűzi, Géring & Szendrei-Pál, 2022).

What first might be seen as an obstacle can actually be a gain. For example, digitalisation and digital transformation may, in the beginning elevate frustration and difficulties due to lack of digital competences, but, as a necessary adaptation to change, people start to develop skills and knowledge and expand their range of proficiencies.

Information and digital literacy are mandatory requisites of graduates and mandatory skills of contemporary educators. Digital literacy refers to "the awareness, attitude and ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, evaluate, analyse and synthesize digital resources" (Martin, 2006, p. 155). The level of information and digital literacy alongside effort and performance expectancies of the users have an impact on the use of digital technologies: the better the skills, the more often they will use technology (Venkatesh et al., 2003; Nikou & Aavakare, 2021).

Digitalisation is considered already a common good and is mostly taken for granted, but it does not mean that it has reached its full potential. The negative effects are still studied, and new options and necessities are rising such as the need for open and cross-functional (crossdisciplinarity) digital collaboration, alongside rapid need for technology adaptation policy, and increased expectation of performance due to efficiencies of more IT use (Nurhas, 2021).

Alongside digital technologies also the fields of artificial intelligence and automation, robotics and virtual reality evolve, sometimes in close dependency with each other, sometimes in leaps of one domain or another. It is important to raise awareness of the complexity of the phenomenon (it is considered as the Fourth industrial revolution, World economic forum, 2016) with cyber-physical systems shaping the future of humankind and to focus both on opportunities as much as on danger.

2

Digitalisation of higher education

2 Digitalisation of higher education

This chapter focuses on digitalisation in higher education, and how it changes learning and university teachers' work. Further on the central questions for teacher's work relate to blended learning, digital learning environments and challenges of hybrid teaching which are also discussed.

2.1. Transition to a hybrid education system

Holding a teaching position in a higher education institution comes with many challenges, like keeping up with the state-of-the-art research and offering that knowledge to students. The Bologna process has been the most influential change in higher education systems in Europe, bringing the focus of education on student-centred learning, competence development and learning outputs for a better adjustment to the labour market. However, the COVID-19 pandemic introduced new practices in teaching in the higher education institutions, with online teaching becoming more widespread (Ramirez Anormaliza et al., 2015). This involved a massive conversion of the professionals involved in education to digitally competent staff (Bonfield et al., 2020) leading to the hybrid educational model that combines in-person learning with online education (Gnaur et al., 2020).

Universities not only provide transfer of knowledge and competence from professors to students, but they are also called to expand their activities as critical players in promoting changes at economic and social levels. Thus, this major change in the way educators face teaching and learning is due to the rise of the post-pandemic digital society, within which they are required to take the lead in developing digital capabilities. Digital competences are imposed as essential abilities for most jobs of the future by what Schwab (2017) defines as the Fourth Industrial Revolution: integration of various technologies in all workplaces leading to a globalised digitalisation.

The European Union's Digital Agenda (European Commission, 2014) stated even before the changes brought about by the COVID-19 pandemic that, in future, basic digital competences in the form of information and communication technology (ICT) skills will be needed for most of the jobs and higher education institutions are the ones to instil them in the younger generation, hence the need of fostering digital skills in both educators and students (European Comission, 2018). Online learning during the pandemic proved that educators' digital competences at all levels but especially in universities increased in terms of both quality and quantity to cover the need to use digital tools to deliver courses to students forced to take up online learning in an unprecedented global learning experiment (Zimmerman, 2020).

Thus, as higher education became more digitalised it required a change in the students' profile in terms of their capacities to interact with the content or teaching resources, with the teachers themselves, and even with the other students, be they virtual or face-to-face encounters. These aspects demand a new teaching model, a hybrid one, where students are responsible for their own learning and the teachers/professors are the resource-person to turn to for specific information. Online learning offers the student the liberty and freedom of choice regarding the learning sources and even the scheduling of learning activities. Academia has had to overcome its resistance to the use of new technological devices, resistance caused by the anxiety of a deficiency in knowledge and competences and by stepping out of the comfort zone, the professors needing to develop a new competence – that of "meta-change", defined as the ability to manage the internal change while the situation is always changing (Bauman, 2005). Teachers in higher

education are challenged by the shifts both in terms of knowledge development and the means of transferring knowledge to students in a way that competences are formed, going beyond simply sharing information.

The responsibility of bridging competences developed during formal training and the labour market requests has always been that of the universities, which in the context of an ever increasingly complex labour market, which now is even more globalised and digitalised highlights the need for change at the core of the education system, universities transitioning from an old-style role of just transmitting information to a wide-ranging role as entrepreneurial hubs taking part in the economic development of regions (Wakkee et al., 2019), integrating traditional research and teaching activities with present-day endeavours regarding technological development and knowledge management. Also, universities are major players along with the other social and economic stakeholders in society.

> HOLDING A TEACHING POSITION IN A HIGHER EDUCATION INSTITUTION COMES WITH MANY CHALLENGES, LIKE **KEEPING UP WITH THE STATE-OF-THE-ART RESEARCH AND OFFERING THAT KNOWLEDGE TO STUDENTS.**

The main outcome of this global learning experiment (Zimmerman, 2020) caused by the COVID-19 pandemic is the rise of the hybrid teaching system which has remained as proof of the hardships we survived from as well as proof that teaching and learning can keep up with the changes in society better than it was expected. Teaching and learning online prepared, sometimes through a crash course, some of the teachers and the students for the new hybrid system, which should make the best of both worlds, analogue and digital. Others had already digitalised their teaching and learning, the pandemic type of education only capitalising on and enhancing existing competences.

2.2. Changing requirements of university teachers

Turning to a new education system pressures teachers to develop skills unnecessary before but essential now, such as digital skills for being able to run a class as well as specific online class dynamics management skills. With professors seen as guides and mentors (in the student-centred paradigm), only designing the paths of learning, their digital competences are paramount. The digital language is the lingua franca in our digital society therefore being a teacher nowadays implies having good digital communication skills to match those of the digital-native students. Not all universities were lacking digital solutions before the COVID-19 pandemic, some even offering online courses in the form of MOOCs which was possible by having already enclosed ICT in their teaching and learning processes. However, in most off-line institutions, the pandemic called for a rapid adjustment supported by investment in ICT, reviewing their pedagogical paradigm and updating the competences of those involved in this process and the material conditions of the classrooms necessary to encompass the technological advancement required by the integration of ICT tools, laying the foundation for hybrid learning spaces where discourse, formats, tools, people, and contexts are mixed (Núnez-Canal, de Obesso & Perez-Rivero, 2022).

The hybrid model represents a "learning approach that combines both remote learning and in-person learning in order to improve the student experience and ensure learning continuity" (UNESCO, 2020). It may be applied in various forms: flipped classrooms, synchronous teaching via different platforms for video conferences, asynchronous classes

with assignments for students to do at their own pace, having compulsory remote components used by teachers to provide teaching, learning, and assessment. In view of universities' meta-change competence, this hybrid model presents itself as suitable due to its flexibility and ability to adapt to a changing environment (Núnez-Canal et al., 2022).

Universities have been forever changed and being a higher education teacher in the hybrid system requires developing new pedagogical skills specific for the new education system. Although introduced by a crisis, digital education has proved to be the answer to a question not asked yet, about the effective globalisation of learning and the possibility for universities and university personnel to step up to the challenge of the new digital society and even promote it. In the digital society, digital competences are essential, and the hybrid teaching model offers most advantages. In this context, Gnaur and his colleagues (2020) argue for the obligation to offer educators programmes of life-long learning to support their new needs, so that they feel empowered to grow personally and professionally and teach in the new digital environment. Lack of digital skills may lead to negative emotions regarding online teaching (as it happened to part of the teachers when they were forced by the pandemic to turn to online teaching without appropriate preparation). During the pandemic crisis, the least digitally skilled educators had negative responses to online programs whereas more digitally trained teachers perceived digital skills as helping even from a pedagogical point of view, digital competence evolving from a simple instrument to a crucial pedagogical component of the portfolio of teacher competences at all levels (Portillo et al., 2020). We cannot fathom higher education outside technological evolution and teaching cannot be detached from the advancements in all other scientific areas, the teaching profession evolving alongside the digital society and the digital-native students.

Digital competences should be viewed from a holistic perspective, with professors covering three fields: teaching using ICT resources "thoroughly", teaching "about" digitalisation and "promoting" the development of digital competence among students (Gibb, 2002). As always, the professors' role is paramount for this new paradigm, the educator offering the background on which students develop their own interests and abilities within a specific framework. The ICT skills are transversal competences, applicable throughout work-life contexts therefore are set as the main goals for all educational systems in Europe (European Council, 2018).

The design of the online teaching activities differs from the traditional ones, as the context is changed. Specific strategies should be adopted for online teaching: laying a solid ground for efficient teaching, learning, and assessing learning outcomes, in a medium that can foster these efficiency, assuring the existence of a unity in terms of mutual cognitive encounter and social interactions within the teacher's presence; new technologies should be introduced gradually and the educational experience should be reconsidered using the feedback received by the teacher (Núnez-Canal et al., 2022).

Online teaching requires appropriate pedagogical modernisation in seeing the role of teaching – teachers become designers, education being a design profession in which educators select the activities, resources, and elements to create the best learning process for the student in which ICT plays a main role (Warr & Mishra, 2021). The figure of the educator has changed, the focus now being on their ability to employ the student-centred paradigm to hybrid education. The educator's responsibility is to design and monitor students' learning, whereas concept learning is, as it has always been, the students' responsibility. The accountability for personal and professional development is transferred to the students, thus autonomy and responsibility being promoted.

The integration of technology in educational contexts relies on specific key elements: teachers' attitude towards technology and propensity to use it in class, teachers' digital competences and teachers' access to technology to solve day-to-day problems. These elements can be incorporated into the will, skill, tool -model of technology integration, constructed as an explanation of what really happens when encompassing ICT in education (Christensen & Knezek, 2008).

Professional digital competence for teachers can be described as comprising the ability to integrate and use technology for educational purposes as well as having a set of generic

//

UNIVERSITIES HAVE BEEN FOREVER CHANGED AND BEING A HIGHER EDUCATION TEACHER IN THE **HYBRID SYSTEM REQUIRES DEVELOPING NEW PEDAGOGICAL SKILLS SPECIFIC FOR THE NEW EDUCATION SYSTEM.**

skills suitable for all situations, both personal and professional, as well as specific teaching-profession skills (Lund, Furberg, Bakken & Engelien, 2014). Teaching can no longer be separated from technological development and the integration of technology in teaching can be fostered by tackling with the barriers that may hinder it: first order barriers, pertaining to the educational context in terms of resources, training, and support, and second order barriers, namely factors depending on the teacher's conception on their abilities as teachers and their perception of the technology value (Ertmer et al., 2012).

A new educational paradigm, the competence-learning approach, has been proposed to merge education with the requirements of the contemporary digital society (Núnez Canal et al., 2022), even before the introduction of the hybrid system. The authors define competence as the ability to answer to demands or perform tasks successfully, the competence covering knowledge and skills and the ability to face complex demands by putting such skills into action in specific situations, as well as using psychological resources, skills, and attitudes. One of the key competences for lifelong learning is the digital competence (European Council, 2006) therefore the educators' digital competence plays a key role in the development of digital skills in students.

Being a teacher in a higher education institution in the digital age requires the development of specific competences – both the competence to use digital solutions and that of being able to maintain a work-life balance when using these solutions. Attitude is the major contributor to professors' adaptability to the new learning context as it offers the basis for developing digital competence (staying up to date with the state-of -the art development of technology in the specialty domain as well as in the use of everyday technology in teaching). A positive attitude towards technology and its use in classrooms, be they physical or virtual ones, offers the background for developing students' digital competences. Such a positive attitude is fostered by the support professors receive when integrating ICT in teaching.

2.3. Student perspective on blended learning

Blended learning refers to "learning that is facilitated by the effective combination of different modes of delivery, models of teaching and styles of learning, and founded on transparent communication amongst all parties involved with a course" (Heinze & Procter, 2004, p. 11). Traditional face-to-face teaching can be combined with online modes of learning "drawing on technology-mediated instruction, where all participants in the learning process are separated by distance some of the time" (Siemens et al., 2015, p. 62). The concept of blended learning highlights an integrated plan to utilise and combine face-to-face and online learning in optimal ways, instead of adding technological elements to existing course plans (Cleveland-Innes & Wilton, 2018, p. 6).

Research on learning environments imply that there is a need to recognise formal, non-formal and informal learning and how learning environment supports all these three perspectives (Wilson & Cotgrave, 2016; Sjöblom, Mälkki, Sandström & Lonka, 2016). With digital learning environments a special focus must be paid to the student engagement, self-efficacy and

motivation since these tend to have a huge influence on successful learning.

Research on higher education students' learning *engagement* has been conducted more and more (Bond & Bedenlier, 2019; Henrie, Halverson & Graham, 2015; Kahu & Nelson, 2018; Nkomo, Daniel & Butson, 2021; Wiseman, Kennedy & Lodge, 2016). Student engagement is a multifaceted concept and crucial for learning and development (Henrie et al., 2015; Kahu, 2013). Student engagement can be seen related with the immersive experience, too. Gamification and game-based learning models try to increase the engagement to the learning process (Kangas & Ruokamo, 2012).

However, students value feeling safe even more than having the gamification integrated to their learning. Teacher's pedagogical practices are crucial in this. Learning experiences need to include feeling valuable and respected. Student who feels confident that they will pass the exam and that their learning process is supported by the teacher, also will experience better well-being (Voss & Kruber, 2006).

In the digital learning environment student's *self-efficacy* becomes central together with student's digital competence. The areas where self-efficacy has a strong influence are group work, using different learning resources, and teacher–student interaction (Prior et al., 2016). When COVID-19 pandemic has weakened, there has been a lot of discussion on the balance between F2F learning and distance learning, the learning practices that work well as well as the student well-being (Cesco et al., 2021; Hawley et al., 2021; Kaparounaki et al., 2020).

Finally, the key to learning is *motivation*. Motivation – especially internal motivation – is about competence, relatedness, and autonomy (Deci & Ryan, 2000). Learning experience needs to add feeling of belonging to the group of learners. Learning assignments and learning materials need to have meaningful connections to the learner. When student is having sense of competence there are more motivation for learning. With autonomy there is a feeling that student can participate in decision making on the ways of learning and ways of living (Lonka, 2020; Hattie & Yates, 2014).

HOW TO HELP STUDENTS TO LEARN?

Brain research suggests that to improve learning, we need to emphasize four different areas: Attention, Generation, Emotions, & Spacing (Davis et al. 2014).

The area of ***attention*** reminds us that you should take a single focus of attention in learning sessions and not to multitask. To keep your attention, it is good to change to a discussion or some other refreshing practice at least for a moment approximately every 20 minutes.

Generation means act of creating your own connections to the new topic that you have been learning about. You should share those connections, too. Regarding remembering what you have been learning, even wrong answers are valuable when you receive some relevant and timely feedback. In generation you imagine what you have just learned and its relevance in a social context. Students should be generating their own connections instead of teacher telling them the connections.

Emotions belong to learning. Positivity is better than negativity when emotions are in question, but they both help learning. However, too much emotional arousal can interfere with attention, which can hinder learning. Without focus, it is always harder to learn, and positive emotions are better in that regard. They also have good effect on creativity, insight, and expanding perception.

Spacing means having some space (usually a day or more) between learning and review sessions – time between initial and subsequent learning. Spacing can also take just a few minutes as a filler task in between. The ideal minimal gap between study sessions includes some sleep. Revisiting what you have learned three times, with some days between each session, brings memory up even 60%. (Davis et al., 2014, p. 2–10.)

3

Digital well-being and technostress

3 Digital well-being and technostress

Well-being as a concept is a psychological construct concerned with how people think about and feel about their life, about what they have, and what happens to them (Maddux, 2018). These evaluations of one's own life are subjective and not correlated with objective economic well-being as defined by economists. So, irrespective of objective life conditions (such as income or access to medical services), some people live meaningful and life full of joy, while others tend to be unhappy and unsatisfied. People subjectively evaluate their lives and domains such as marriage or career both now and for longer periods (Diener, Oishi & Lucas, 2003, p. 404).

Subjective well-being (SWB) is "the experience of joy, contentment, or positive well-being, combined with a sense that one's life is good, meaningful, and worthwhile" (Lyubomirsky, 2013, p. 32). There are two major conceptions on SWB. Hedonic conceptions emphasise happiness and life satisfaction as indicators of well-being and state that SWB is the balance between the extent of experiencing pleasant and fulfilling events, on one side, and unpleasant events on the other side. In this view, what matters is how much one person enjoys his or her life and feels good about it (Maddux, 2018). From this perspective, a person with high SWB experiences more positive affect than negative affect and is satisfied with his or her life (Diener, 1984). The second major conception views WB as a eudaimonic construct and tries to capture the core aspects of what it means to live a good life, including achieving and fully exercising our capacities and potential (Ryff, 2014). Among these core aspects, different authors mention self-acceptance, positive relations with others, personal growth, purpose in life, environmental mastery, and autonomy (Ryff, 1989), positive emotions, engagement, meaning, positive relationships, and accomplishment (Seligman, 2011).

Independent of its conceptualisation, empirical studies have consistently shown that subjective well-being promotes success in many life domains. People with higher subjective well-being are more altruistic and active, have better conflict-resolution skills, and are more confident in their abilities (Lyubomirsky, King, & Diener, 2005). In organisational settings, people with greater well-being tend to display creative thinking more often and are likely to earn more money (Diener & Biswas-Diener, 2008) and report higher overall job satisfaction.

But the most relevant outcome of living a happy and meaningful life seems to be related to physical and mental health. People with greater well-being are for example less vulnerable to catching viruses and infections (such as the common cold) and when they do they report fewer symptoms. They also experience better physical health and live longer than people with lower levels of well-being. (Diener, Pressman, Hunter & Delgadillo- Chase, 2017)

> ONE KEY QUESTION WHEN DISCUSSING WELL-BEING IS **"WHAT LEADS TO WELL-BEING?"**

One key question when discussing well-being is "What leads to well-being?" On the one hand, life circumstance theories affirm that a person's life circumstances lead to SWB, so people with advantageous circumstances will have greater SWB than those less fortunate. The life circumstances that are considered to contribute most to well-being are life experiences (minor or major, positive or negative) and favourable or unfavourable socio-demographic factors like socioeconomic status, education, living

conditions, and physical health (Lyubomirsky & Dickerhoof, 2010). From this perspective, overall SWB is the result of satisfaction with different life domains (career, family, living conditions, health, etc.). On the other hand, dispositional theories propose that SWB results primarily from people's tendency to appraise life circumstances and life events as being positive or negative (Lyubomirsky & Dickerhoof, 2010). Such tendencies are genetic predispositions, linked to temperament. From this perspective, people high in neuroticism (the general disposition to experience negative emotions such as anxiety and depression) usually report lower levels of SWB as they are more prone to interpret life events in negative ways and to experience negative emotions more intensely in relation to negative life events. More extroverted people (more socially outgoing and active) generally experience more positive emotions and report greater SWB than introverted people. Of course, extrovert people engage more in social interactions and the quality of social relations is a predictor of SWB. Agreeableness is also positively associated with SWB, people who are considerate and easy to go along with, and more likely to have harmonious relationships also report greater SWB. People high in conscientiousness (organised, responsible, perseverant) report higher levels of SWB than those low in conscientiousness. That is probably because highly conscientious people tend to be more persistent in achieving goals, are more physically active, are better in delaying gratifications and all these lead to success in life (Maddux, 2018).

What we know so far is that both objective life circumstances and personality traits influence SWB, but their effect is mediated by how people think and interpret, in a subjective manner, the life experiences. Individual perceptions of specific life domains are partly the results of general disposition or temperament. Therefore, for assessment of subjective well-being not only the subjective evaluations of specific life domains should be taken into consideration, but also objective life circumstances and internal predispositions that may predict people's emotional, cognitive and physical reactions to those life circumstances.

When discussing the subjective well-being of teachers working in Higher Education, we should also take into consideration the characteristics of organisational culture in universities which count as circumstances that impact individual perceptions of the work domain in people's lives. Across the globe, universities have become increasingly business-like with a strong focus on productivity and performance, especially research productivity. In many countries, the performance rankings determine the allocation of public resources and research fundings and are also used to recruit fee-paying domestic and overseas students. The competition between universities for recruiting students and for performance rankings is now at a global level. All these aspects lead to competing demands for both teaching and research activities, competition among peers to succeed in academia and pressure to publish and win research grants (Maican, Cazan, Lixandroiu & Dovleac, 2019). Working under such pressures may lead HE teachers to experience high levels of stress which, in turn, may negatively impact their mental health and well-being (Truta et al., 2023).

So far, most studies on HE teachers' well-being focused on general antecedents as the one previously mentioned. Less attention has been given to specific antecedents like digitalisation in HE. For the past two decades, ICT applications have become fully integrated in teaching, research, and in every other aspect of teachers' work in the form of school networks, communication and collaboration apps, e-learning, cloud and VR technology, and others. There is a broad body of literature on the integration of technology in teaching (Howard & Mozejko, 2021; Scherer & Teo, 2019; Wilson, Ritzhaupt, & Cheng, 2020) and on technology acceptance (Maican, Cazan, Lixandroiu, & Dovleac, 2019), which shows that technology is an invaluable resource but also a job demand that may affect teachers' well-being. More attention should be given to how working in a competitive culture marked by digitalisation may affect subjective well-being. What specific aspects of digitalisation in HE may negatively impact how teachers perceive and evaluate their lives? And how could we integrate the digital resources available in universities worldwide to help teachers to better cope with the demands of a digital society.

Work engagement refers to enjoying one's work and dedication to it, which at best

produces well-being also in digital working context. Work engagement differs from the concept of flow, which refers to a peak experience while work engagement is a more permanent state of being. In a workplace that is characterised with high work engagement better work methods are actively developed, colleagues are helped and supported. The experience of work engagement is described as genuine well-being and enthusiasm, which at best creates a cycle of positivity. Even tasks that are laborious feel meaningful. An increase in work productivity is also a positive effect of work engagement of an employee. When engaged to work it is easier to feel moments of flow. (Hakanen, 2021)

WORK ENGAGEMENT CONSISTS OF THE FOLLOWING ELEMENTS (HAKANEN, 2021):

1. Versatility and development of work tasks. Development at work and the opportunity to use one's own strengths and expertise increases faith in one's sense of ability.

2. Independence. The possibility of independent work instead of dictation encourages innovation-oriented activities.

3. Immediate feedback on work performance. Immediate feedback on one's activities is important to wellbeing. In addition, immediate feedback on the work directs goals and ways of doing work in the future.

4. The relevance of the task. Work has a wider meaning and has, for example, a positive impact on other people's lives.

5. The team's common goals, shared vision, and work tasks. Sharing knowledge and expertise between team members support team's social relations.

6. Psychological safety. Tolerance and acceptance encourage being truly present, so the employees don't have to fear negative reactions from others.

3.1. Technostress and well-being

The ubiquity of technology has contributed to the increased complexity of work and nowadays many digital skills are mandatory to complete work-related tasks (Venkatesh et al., 2003).

Digitalisation and technology use, especially information and communication technologies (ICT) open new possibilities to work from distance (telework) or alongside team members in virtual networks, not at the organisation location, at hours that expend more flexible than the rigid 9 to 5 traditional hours. Nevertheless, the flexibility creates challenges like role conflicts, and disturbed work-life balance (working at irregular hours, longer than customary and resting less). Expectation from the employer to be always available via emails/phone, or for online conferences alongside with the temptation to frequently check for notifications, comments, tasks, feedback (as laptops and smartphones are brought home from work) may impair the health and emotional state of the employee.

These observations are in line with literature, that has showed how ICTs create stress by forcing the employees to learn constantly to be up to date with the technology, it's functionality and options (Ragu-Nathan et al., 2008; Tarafdar et al., 2015).

The concept of multitasking that was introduced in our language to signify the ability, or necessity to manipulate more than one source of information at the same time, give way to new phrases like digital hassles or cyber hassles (Weiser, 2014). They designate a new form of daily hassles like being left unseen (when the receiver read your message but do not write back) or being unfriended or rejected when you have sent a friend request. Studies show that such situations have a negative impact on the person (Campisi et al., 2012)

Not only words and psychological construct are introduced, but also, new theories are derived to cover the impact of technology in our life. The Person–Technology (P-T) fit model is derived from Person–Environment fit model and is looking at the match

between person and the technology to better understand the effect of technology use on people (Ayyagari, Grover & Purvis, 2011).

The P-T fit model consists of three components: technology characteristics, stressors, and strain. *Technology characteristics* refer to features and properties of ICT used (portability, instant connectivity, processing speed, screen resolution sensitivity, additional improvements). *Stressors* represent elements or conditions that create stress (intensive usage, diminished privacy, overwhelming access to information). *Strain* refers to the physiological, psychological, and behavioural consequences of stress that are observed in individuals (from back pain or stinging eye to sleeplessness and irritability and low mood).

A term that brings technology and stress even closer together is *techno-stress*, defined as "inability to cope with new computer technologies in a healthy manner" (Brod, 1984 apud, Ragu-Nathan, 2008, p. 418). This wider term is an umbrella that covers two types of factors: techno-stress creators and techno-stress inhibitors. It is important to understand them, in order to introduce measures that may diminish their impact on health and well-being or to design conditions that enforce techno-inhibitors' effects.

Tarafdar, Pullins, & Ragu-Nathan (2015) define five techno-stress creators, and three techno-stress -inhibitors:

Techno-overload refers to the demand ICTs impose on users to work faster and longer, to manage excess information and features, to comply with continuous flow of organisational requirements.

Techno-invasion describes the intrusive effect of ICTs in situations where employees can be reached anytime and are expected to be connected to organisational networks, to respond instantly, even if it's non-work time, or surveillance issues due to possibility to be located or checked your connectivity and activity logs, disturbing the work-personal time balance.

*Techno-complexity r*efers to the ever-present progression of digital technology that leads users to feel insufficiently trained or to lack confidence in their digital skills. Due to the complexity of the apps or technologies people feel left behind by colleagues who are perceived more competent and because of that push themselves in learning and understanding ICTs, an effort that sometimes exceed their resources in energy and time. It can also include hassles and complications in operating ICTs.

Techno-insecurity is generated by the fear of losing their jobs due to the advance in technology, machines being able to take over their jobs, or other people who are higher qualified.

Techno-uncertainty describe situation when individual fail to keep up with all the changes and upgrades of technology so that they must constantly learn and educate themselves about new ICTs, this urge generating anxiety. It also refers to the situations when someone must constantly check and verify policy concerning ICT use without being briefed by the organisation responsible, again causing anxiety.

Technostress inhibitors are represented by literacy facilitation, technical support provision, and involvement facilitation, considered internal and external mechanism that can contra-balance the techno-stress creators. Organisations might offer training and technical support, inform their employees regarding digital transformation that are implemented, take into consideration their feedback, introduce change gradually, and so on. Multitasking, telepressure (email, job-related messages, notifications), work overload, task complexity, role overload (frequent in education) are all stressors. Autonomy, opportunities for development, organisational support are resources that can reduce stress (Reif, Spieß & Pfaffinger, 2021).

Pfaffinger et al. (2020, p. 26) are using the expression *digitalisation anxiety* to describe "feelings of tension and discomfort with respect to the emergence of new technologies and the integration of those technologies in all aspects of daily life". Anxiety is triggered by an affluence of errands that are constantly coming in while a person does not consider themselves prepared to manage them or having enough time to get everything done in a satisfactory manner. Plus, the feeling of urgency and the lack of understanding and support from work, aggravate digitalisation

"

ANOTHER BODY OF RESEARCH FOCUSED ON AVAILABILITY STRESS RESULTING FROM BELIEFS ABOUT OTHERS' **EXPECTATIONS THAT THE INDIVIDUAL SHOULD RESPOND AND BE AVAILABLE BY DIGITAL MEANS TO THE DEMANDS THAT COME FROM SOCIAL OR INSTITUTIONAL GROUPS/PERSONS.**

anxiety. Digitalisation anxiety included concerns with unpredictable consequences for living and working within society, increasing organisational expectations for employees, self-imposed pressure and a perceived loss of personal control. However, it is good to keep in mind, that digitalisation as a process was not only related to negative outcomes. In one survey, digitalisation of the work environment evoked positive feelings for about half of the respondents, while the other half mentioned negative or ambivalent feelings (Pfaffinger et al., 2020).

Interventions meant to reduce digitalisation anxiety can be initiated at a societal level (such as legal regulation concerning access, use and warnings for population when using digital technologies, and increase the awareness of IT immersing in all aspects of life – for example being aware that your location may be exposed, picture seen by unknown people, history of online searching used by merchandisers, and so on). Another level of intervention is the organisational one with measures such as clarifying expectations regarding employees' temporal availability, improving communication about changes regarding new technologies, setting safety measures to protect data and physical and mental health of the employees, offering trainings to support individual learning needs, and job descriptors that include technology use. The third level is individual level activated by setting boundaries for one's own work, participating in trainings offered by the organisation, or finding your own opportunities, taking personal measure to reduce information overload and work demands after working hours.

Another body of research focused on *availability stress* resulting from beliefs about others' expectations that the individual should respond and be available by digital means to the demands that come from social or institutional groups/persons (Steele, Hall, Christoferson, 2019, p. 5). Failing to do so (to be available) generates guilt, anxiety, and fear of negative consequences, mostly because pressure is installed by hierarchical upper positioned people, who exert their position power (Licoppe & Smoreda, 2005) and normative pressure. The outcome is a decreased well-being of the person under stress.

Once again, the impact of such situations is not clear cut. Instead of talking only about availability stress, researchers are considering the *mobile connectivity paradox* (Vanden Abeele, 2021, p. 934). The paradox encompasses both autonomy and loss of control. One can decide where to work, can locate and access information and professionals that have similar interests as they do, to collaborate and exchange practices. All the same that person could feel undecided if they had opted for the best course of action, or if the solution they reached is final. Some more shortcomings are the possibility to be tracked or contacted by anyone, your privacy be invaded. There is also the pressure to acknowledge all the requests that are addressed to you. That's why technology is both a job demand and a job resource (also paradox).

Piszczek (2017) suggested to see technology as a neutral tool, that may become useful or damaging depending on who and how is used. Individual preferences (to integrate work in daily activities and to be flexible about where or how much tasks you bring home, or to separate work and family time

and have clear boundaries between them) and organisation expectations (clear or fade regulations, pressure, or support, and so on) are those to confer significance of technology use. One of the solutions that accommodates many options is that organisations should keep after-work hours electronic communications formally low, but to allow employees to decide for themselves either way.

Even though complex outcomes of technology use should be studied taking into consideration many individual and organisational variables, there are results that connect general categories such as demographic characteristics to technostress. For example, younger students tend to experience lower level of technostress compared with their teachers, and among the last category the older the teachers, the higher the level of technostress (Hauk et al., 2018) and female students tend to feel higher technostress than male students (Upadhyaya & Vrinda, 2021). Also, level of education seems to be inversely related with technostress (Wang et al., 2008; Upadhyaya & Vrinda, 2021).

The relation between technostress and academic life has been also intensively examined. A weak association was uncovered between techno-stressors and the psychological well-being of learners, with techno-insecurity having the greater impact on psychological well-being, while techno-uncertainty has the least effect, followed by techno-overload and techno-invasion (Asad et al., 2023). The authors consider that students, as young generation representatives, can adapt easier to the constant change in apps and digital tools upgrading and consider them an extension of their means to communicate, so the uncertainty is less reflecting in their well-being. There are also studies that found a contradictory result: techno-invasion and techno-overload being the larger contributors to technostress in students (Upadhyaya & Vrinda, 2021).

Qi (2019) argues that sometimes technologies are a blessing while students are using these technologies for personal interest or entertainment, and a curse when students use ICTs intensively for teaching and learning purposes. The study grounded the hypothesis on this opposition (technology use is a friend when young people is using it for personal purposes and an enemy when they are asked to use it for school) but failed to prove it at least in case of smartphone as mobile devices used by students for academic purpose, since no significant correlation was found between smartphone usage in learning and technostress creators.

> THE AUTHORS CONSIDER THAT STUDENTS, AS YOUNG GENERATION REPRESENTATIVES, CAN ADAPT EASIER TO THE CONSTANT CHANGE IN APPS AND DIGITAL TOOLS UPGRADING AND CONSIDER THEM AN EXTENSION OF **THEIR MEANS TO COMMUNICATE, SO THE UNCERTAINTY IS LESS REFLECTING IN THEIR WELL-BEING.**

Not only students were investigated, but also teachers. Techno-stress negatively impacted teacher's life and performance (Aktan & Toraman, 2022, p. 10429–10453). Other study also indicated that there is a negative impact of technostress on academic productivity (Upadhyaya & Vrinda, 2021) or academic performance (Qi, 2019).

In order to increase well-being and to reduce the impact of techno-stress, internal resources such as technology self-efficacy and performance expectancy in teachers have a positive role when activated (Truta et al., 2023).

Information system (IS) literature recently became more substantial with a new framework on techno-stress creators – trifecta theory (Tarafdar, Cooper & Stich,



PICTURE 1. Wordcloud for question 'What do you think technostress means? from DIGIWELL mentor training session.

2019). The authors try to include both sides of digital technology immersion in our life, the positive one as well as the negative ones. The perspective of interpreting technology use only as the cause of aversive condition might be at hand but is limited and neglects the potential that technology use brings to development of a person. After a throw-out review of literature, new constructs were recommended, embedded in transactional model of stress:

- *Techno-Eustress* is felt in contexts when individuals appraise IS as challenging or exciting, and experience consequent 'good' stress, and the outcomes of using technology are positive.
- *Techno-Distress* is felt in contexts when individuals appraise IS as a threat or a risk, resulting in facing 'bad' stress, and consequences are negative.
- *Design of Information Systems* for facilitating techno-eustress and for mitigating techno-distress.

Techno-eustress intervene when persons or organisations see the use of digital technology as a chance to improve, to became better, more competitive, rewarding, a tool that contribute to making your life easier and more pleasant, interesting, and fulfilling. In order to experience techno-eustress, individuals are open to experience, flexible, competent in IS use, intrinsic motivated and organisations cultivate innovation, emphasis employee's well-being and customer satisfaction.

Techno-distress occurs when people see ISs as demanding all their time and energy, too complex, when they feel lost in the complexity of technology, lacking possibilities to make decisions or to control the requirements of using technology. Organisations can make things worse when they impose permanent connectivity and monitor all decisions, and do not offer support or training. By doing so, people are dissatisfied with their work, fail to comply with requirements, experience burnout, and so on.

Information system (the third component of trifecta theory) might be designed to tackle technostress to increase techno-eustress: apps and devices can be designed with increased functionality, intuitive manuals and commends, opt-out options, friendly or even exciting interface, integrated feedback options.

In conclusion the same authors that used to discuss the dark side of technology use (Tarafdar et al., 2011) are now focusing on the bright side of technology (Tarafdar, Cooper & Stich, 2019). They emphasise that new generations are coming, those who no longer accept working in cubicles, or from 9 to 5, but who frame technology revolution as an opportunity to engage in telework, virtual team, and will treat work and life activities with more flexibility and will emphasise more on the bright side of technology.

3.2. IT Resilience and emotional regulation

As technology is increasingly present in everyday life, it is necessary to investigate effective individual characteristics in counteracting technostress. In this context, Klesel, Narjes & Niehaves (2018) propose *IT resilience* as a new construct that can be considered a mechanism for adapting to technostress.

Resilience is a positive psychological state of personal development that implies: the confidence to undertake and make a considerable effort to succeed in difficult tasks; a positive attitude towards current and future success; focusing on the objectives and readjusting the ways to achieve them in order to succeed; sustaining and bouncing back to achieve success when faced with various adversities (Luthans, Avolio, Avey & Norman, 2007). Starting from this perspective, Klesel et al. (2018) argue that IT resilience is a set of individual characteristics that allows people to assimilate external influence factors induced by information technology and perceived as negative and return to an initial state of well-being.

The authors initially suggested that IT resilience is characterised also by self-efficacy, positive attribution, the ability to pursue goals and to bounce back in adverse situations. In more detail, self-efficacy represents the ability to trust oneself and adapt to different work situations involving various technologies, whether it is stress or challenges arising from difficult tasks or errors. A positive attitude towards finding solutions to various problems or tight deadlines, as well as adaptability to technology-induced stress defines the positive attribution. Resilience also means one's capacity to persevere towards their goals, by focusing on technological objectives and readjusting the ways to achieve them by developing structured plans. To be able to bounce back and to continue your way to succeed when faced with technostress and adversity can be done by building supportive social networks and maintaining the work-life balance.

Therefore, IT resilience does not mean being invulnerable to the negative effects arising as a result of modern technologies indispensable to professional work but having the ability to overcome and manage technostress.

Following an exploratory factor analysis, the researchers cited show that IT resilience is a multidimensional construct that includes the following three dimensions: bouncing back, self-efficacy and coping mechanisms. A person's ability to recover from technology-induced stress, survive this adversity and return to their previous level of functioning represents their ability to bounce back, while self-efficacy is given by the ability to believe in one's own abilities and to work with various technologies in any situation. One must develop their coping skills which allow them to manage negative aspects and problems related to the use of technology using humour in analysing various situations and calling on social support.

These results highlight the fact that positive attitude and social support favour resilience, people's ability to bounce back and cope with technostress in their lives and are consistent with other research presented in the specialty literature (Sharma & Sharma, 2016; Smith et al., 2008; Windle, 2011; Winwood, Colon & McEwen, 2013). IT resilience is a psychological concept that must be taken into consideration, along with other biological aspects, when applying a human-centred design based on the importance of reducing technostress (Riedl, 2013).

"

THEREFORE, IT RESILIENCE DOES NOT MEAN BEING INVULNERABLE TO THE NEGATIVE EFFECTS ARISING AS A RESULT OF MODERN **TECHNOLOGIES INDISPENSABLE TO PROFESSIONAL WORK BUT HAVING THE ABILITY TO OVERCOME AND MANAGE TECHNOSTRESS.**

Physical or mental health, resilience and social relationships are influenced by how a person manages their emotions. Emotion regulation includes the voluntary or automatic effort to choose the emotions and the context in which they are allowed to be experienced, as well as the way to express them (Mauss, Bunge & Gross, 2007). It consists of the ability to initiate, preserve, and modulate the occurrence and the intensity of subjective experiences and physiological processes that accompany the emotion. People learn to inhibit their emotional impulses and delay reward by internalising behavioural norms and standards (Denham, 2007). Emotion regulation is learned through experiences that involve human interaction, behaviour modelling, and various learning situations. Avoidance, expressive suppression, distraction, rumination or worry, cognitive reappraisal, problem solving, acceptance and mindfulness are the most used emotion regulation strategies.

Studying the association between various emotion regulation strategies used to manage the negative emotions, Naragon-Gainey, McMahon & Chacko (2017) found people's tendency to resort to several strategies simultaneously and grouped them into the following categories: emotional disengagement, aversive cognitive preservation and adaptive commitment. More specifically, emotional disengagement refers to the distraction and avoidance by which one tries to experience more pleasant emotions by focusing their thoughts and attention elsewhere to escape from the present. Sometimes people stay in repetitive negative thoughts regarding their own failures or self-blame, ruminating hence being fixed on negative emotions (aversive cognitive preservation). Looking for solutions to real-life problems or accepting a situation that cannot be changed to achieve flexibility and experience more pleasant emotions represents an adaptive commitment.

The authors argue that the most beneficial strategies are those aimed at adaptive engagement, while the others may be useful in certain contexts, such as: exploring options and finding solutions to personal problems that can be facilitated by intensively thinking about one's own problems and analysing them in depth. Emotional regulation aims to decrease the intensity and duration of dysfunctional emotions, and grouping strategies into narrower categories provides people with effective ways and tools to regulate their own emotions. The way people experience and regulate their emotions is based on attachment, that extremely important, permanent, innate human need for survival, which involves four major components: people's need to be seen, to feel safe, soothed, and secured (Siegel, 2014). Thus, emotional regulation is influenced by the anxious attachment (constantly seeking the other to obtain emotional comfort or support), the avoidant attachment (pattern of mistrust), or the secure attachment (source of resilience).

Anxious individuals perceive that their own emotional expressions are inconsistently responded to, and they are not convinced that the attachment figure will be available when they seek support. Thus, they are always more prone to separation anxiety, longing for intimacy, preoccupied with the relationships they have, and worried about the other's ability to love them back as much. As a result, they develop an exaggerated emotional expression strategy, especially for negative emotions because these capture the attention of those around them. They also tend to focus on exacerbating negative

emotions because they coincide with their desires to achieve closeness to others and exaggerate attachment needs. At the same time, they strongly emphasise the feeling of vulnerability and helplessness as well as the seriousness of the threats in order to make the entourage offer more attention, comfort, support, and protection. While intensifying their negative emotions and focusing on internal cues of distress, these individuals underestimate their own resources and overestimate danger, which causes their own anxiety to become hyperactive. Thus, the context that preserves the perception of the threat even after its disappearance and the feeling of vulnerability manifested in the face of real or potential dangers are created.

Avoidant people expect to be turned down if they ask for help or comfort and do not trust that their requests will be answered. They try to limit closeness to others because they perceive intimacy as synonymous with the loss of personal independence. Sometimes they make considerable efforts to become emotionally independent and live their lives without the love and support of others (Bowlby, 2011). Because they had experienced repeated rejections of their emotional expressions and in order not to feel ignored or belittled, they developed strategies to hide their emotional expression. In their view, fear, sadness, anger, shame, guilt, rejection, betrayal, or separation represent real dangers and a lot of personal vulnerability. As a result, they tend to block or inhibit these emotions, as well as the emotional reactions arising because of rejection, betrayal, or separation from others because such potential or real threats favour the emergence of undesirable attachment needs that predispose to vulnerability (Fraley & Shaver, 2000). They make every effort to avoid consciously experiencing and expressing unpleasant emotions or reacting emotionally by resorting to various strategies such as: suppression, distraction, or suppression of action tendencies. These defences greatly reduce the probability that the emotional experience will be integrated into existing cognitive-affective structures that can determine the modification of the learned pattern and allow the subsequent use of the information in a social context.

While anxious people often ruminate (which accentuates distress) and fear that others will not respond promptly to frequently expressed needs for love, comfort, or support, the avoidants trust only themselves, are sceptical of the intentions of those around them, and prefer to distance themselves emotionally and cognitively. These attachment patterns are maladaptive because they prevent them from experiencing the interdependence, support, and trust necessary to maintain well-being and resilience. In this way, frequent activation, suppression of unpleasant emotions and non-modification of distorted representations about oneself and others are favoured, which causes them to feel unsafe in interpersonal relationships. Because they have not learned to regulate their emotions or distress and have not discovered their own internal resources to handle demanding events, they are much more vulnerable in terms of physical and mental health. Memories associated with anxiety or sadness are accessed quickly by the anxious and rarely by the avoidant. At the same time, the former very rarely resort to suppressing thoughts related to separation and the latter often resort to this emotional regulation strategy, which causes them to feel overwhelmed, especially when the material to be suppressed is seconded by a cognitive load (Goldberg, 2000; Mikulincer & Shaver, 2019).

Secure individuals trust that the attachment figure is attentive to their needs and responds with affection by providing comfort when faced with difficult situations. They feel comfortable in privacy, are warm, loving, and willing to bravely explore various new contexts of life. As a result, they allow themselves to express themselves directly and openly because they trust that the others are receptive and supportive of their own needs. They are also optimistic, rarely resorting to dramatic appraisals of danger because they are confident in their abilities to cope with the inherent difficulties of everyday life. Most frequently, they express their feelings freely without distorting them and use constructive emotional regulation strategies such as: problem solving, re-evaluation or seeking support from others. Research results prove that they are more resilient when facing life's challenges because the secure attachment style helps them survive the moments of negative emotional charge, regulate their emotions, adapt socially, and maintain their mental health (Mikulincer & Shaver, 2016; Shaver & Mikulincer, 2002).

4

DIGIWELL toolbox for digital well-being

4 DIGIWELL toolbox for digital well-being

The DIGIWELL toolbox consists of mentoring program for university teachers and other personnel, a booklet that summarises key elements of digital well-being and which can be used as a tool in mentoring, and digital well-being e-course.

4.1. Mentoring program for digital well-being

The challenge of technostress straining our well-being is a complex issue to mitigate. Many causes of technostress can be traced back to structural issues and changes in society as mentioned in earlier chapters. To deal with one's own digital well-being can be challenging, especially if there is no available support network that can help utilise changes in work or personal life. Mentoring programs can be a useful method of enacting changes in an organisation (Klinge, 2015), and it can provide individuals with the tools they need for sustained change (Boyatzis, 2007). In this chapter we will look at what mentoring is; how the practice of mentoring relies on enabling and facilitating learning in mentees; and lastly how *The Booklet: Pocket Guide to Digital Well-being* can be used as a potential tool in mentoring others about digital well-being.

Mentoring can be understood as a reciprocal relationship between a more skilled, and often more experienced, "mentor" and the inexperienced "mentee" or "protege" (Klinge, 2015). Strengthened social bonds, and further developing competencies are some of the benefits that both the mentor and mentee

Mentor benefits	Mentee or protégé benefits	Organization benefits and outcomes
Learning partner	Knowledge	Improved job performance
Knowledge	Skill enhancement	Productivity
Skill enhancement	Supportive feedback	Cost-effectiveness
Cognitive rejuvenation	Assimilation into the culture	Improved recruitement
Feedback	Sense of cohension, responsibility, and itegrity	Talent pool development
Expanded awareness of environment	Awareness of political environment	Career and life planning
Creativity	Sense of power and confidence	Career satisfaction
Sense of purpose and fullfillment	Creativity	Increased organizational communication and understanding
	Leadership development	Increased trust
	Higher earnings	Maintaining motivation
	Personal values clarification	Improved strategic planning
	Advancement of underrepresented groups	Creativity
	Increased job satisfaction	Employee enthusiasm
	Greater influence in the organization	Collaboration

TABLE 1. A Model of the Consequences of Mentoring in a Learning Organisation (Klinge, 2015)

enjoy from such a relationship (see table below from Klinge, 2015 for more benefits). For mentorships to work, the **social bond** between the mentor and mentee needs to be strong. For this reason, mentorships have been likened to a "work marriage", considering the amount of work and time the two participants will need to dedicate and spend with one another (Kalbfleisch, 2007).

Formal mentoring programs usually feature a set of goals that are aligned with a wider organisational strategy (Baugh & Fagenson-Eland, 2007). Clear **goal-making** can also serve to illuminate what type of mentors are needed, and hence what the mentees are supposed to learn. Voluntary participation is often associated with higher satisfaction with the program. As such, good mentees often express a willingness to learn, curiosity, work engagement and good communication skills, whilst good mentors need good interpersonal skills (Hale 2000 referenced in Baugh & Fagenson-Eland, 2007, p. 261). **Matching** the mentees with an appropriate mentor is an important step in making sure the relationship doesn't fail or become dysfunctional. Using the participants input can lead to more favourable matching, because mentors and mentees with aligning values and interests can help establish a more functional relationship in the short run. Scheduling **regular meetings** and opportunities to interact, where expectations and goals are clarified, can also help establish a functioning mentor-mentee relationship (Baugh & Fagenson-Eland, 2007).

According to Ambler, Cahir, and Harvey (2017), mentoring in higher education exhibit a lot of the same effects as other mentoring programs (enhanced learning culture, career development and friendship,) as well as similar drawbacks when the mentoring relationships become dysfunctional (unhealthy power dynamics, resentment, and lack of personal growth). Seeing as though the needs of universities are highly diverse, mentoring programs ought to be specifically adjusted to what the institution needs. This is why Ambler, Cahir, and Harvey (2017) view mentoring programs as a spectrum that can be adjusted using three steps, that are detailed in the figure below.

The adjusted mentoring programs can also take several forms that may be appropriate depending on institutional needs. Mentoring programs can take different forms: **one-on-one mentorships** can be facilitated

The three-step spectrum approach to mentoring guide		
Step 1 beginning	**Step 2 building**	**Step 3 concluding**
1.1. Select a potential mentor **1.2. Make initial contact** **1.3. Establish:** ⊖ **purpose** ⊖ **style, duration and regularity of meetings,** ⊖ **timeframe for the relationship,** ⊖ **confidentiality agreement, and** ⊖ **no-fault, no-blame procedure**	**2.1. Mentees should** ⊖ **be proactive in acquiring new skills and knowledge, and** ⊖ **accept responsibility for decisions and actions** **2.2. Mentors should** ⊖ **provide informations, constructive feedback and guidance, and** ⊖ **actively listen** **2.3. Mentors and mentees should:** ⊖ **engage in critical thinking and reflection,** ⊖ **complete task by agreed times, and** ⊖ **maintain confidentiality**	**3.1. Mentors and mentees independently complete a reflection on key learnings and key outcomes** **3.2. Mentors and mentees collaboratively share these final reflections**

TABLE 2. Retrieved from Ambler, Cahir, & Harvey, 2017, p. 16

with a formal program if they don't form informally between individuals in a working environment; **group mentoring** involves a group of mentees all working with one mentor; and **peer mentoring** can be two colleagues or a small group who help each other; **online mentoring** basically looks like one-on-one mentoring or group mentoring but facilitated through digital platforms; **compound mentoring** means that one mentee has many mentors who are chosen based on their expertise in specific areas.

Learning in mentoring relationship

As learners, the mentor and mentee are expected to be **self-directed**. This means that learning activities, and the mentor-mentee interactions cannot be purely instructional. Instead, the mentee and mentor ought to work collaboratively to figure out how to improve their practice, and solve problems (Knowles, 1984 referenced in Chinnasamy, 2013). Building the ideal learning environment for the mentor-mentee relationship to grow (McGowan, Stone & Kegan, 2007) strikes the balance between self-directedness and instruction. As such a good learning environment includes elements of *confirming environments* that hold and affirm us, acknowledge our struggles, and seek to accept and understand us; *contradicting environments* that push us to let go of what we find comforting, they seek to elevate us from established practice. Ideally these complement confirming environments as opposed to outcompeting them; *continuous environments* that are stable, reliable, and predictable, allow us more easily adjust to them. Leaving these environments may be difficult but will remain after departure if we were ever to return. This especially refers to leaving the mentor-mentee relationship to become colleagues again. It can be argued that in practice the above means learning what the mentee (and by extension mentor) needs to feel safe, challenged, and secure in the relationship. This will in turn facilitate productive learning experiences between the mentor and mentee.

Knowing how learning between individuals work can enhance the mentors practice, because the central goal of the mentor is to help the mentee learn. In the s*ociocultural learning theory,* the importance of social interactions for learning is emphasised. In this perspective learning is situated in social and cultural context, and knowledge is first developed through social interactions before it is internalised by the individual. Learning and development first take place interpsychologically, socially between people, and then intrapsychologically, through an inner process in the individual (Vygotsky, 1978). Thus, the most important arena for learning in this theory, is through conversations with others. Via language, learners have access to unique tools for developing and communicating knowledge. This means that we don't need to experience everything ourselves because we can acquire knowledge through what others tell us about their experiences (Sälsjö, 2006).

The **zone of proximal development** is a concept in sociocultural learning theory that orients training towards future learning. This means refraining from retreading already acquired learning, but instead focusing on learning skills and abilities that have yet to be acquired but are nonetheless within reach. It challenges the assumption that education or training should be adapted to the learner's level of understanding indicated by what level of problem solving the learner is able to manage alone. Thus, the zone of proximal development refers to the distance between the results of problem solving that the learner can manage alone and what the learner can manage when receiving guidance form a more competent other (Vygotsky, 1978) or in our case, a mentor.

"Scaffolding" is a process developed by Wood, Bruner and Ross (1976) that can be used to support learning in the zone of proximal development. In teaching situations, scaffolding is used by the teacher to help their pupil solve a problem or meet a challenge by themselves. This is done by allowing the pupil to do as much as they can and only helping when they cannot achieve something on their own. This way the teacher provides a "scaffold" to support the pupil, and by gradually removing the scaffold the pupil strengthens their skills to the point where they no longer need the added support. This can be used in mentoring the same way by having the mentee to do as much as possible by themselves, and by gradually reducing the scaffolds, they learn how to achieve

something they can't do on their own yet. Scaffolding consists of six actions the mentor can execute to support learning and problem solving in their mentees (Wood et al., 1976). The first action is the most self-evident and consists of "getting the learner interested in the activity, and to follow the task's requirements". As a mentor this involves getting the mentees involved and interested in the subject of digital well-being and the tools to improve their own digital well-being. The second is "reducing degrees of freedom," which means reducing the number of acts required to reach a solution. This means limiting task difficulty by doing parts of the task for the mentee and allowing the mentees to gradually master more and more of the tasks "sub-components" as their skills develop. The third action is "direction maintenance" or keeping your mentees motivated and on the right track. The fourth scaffolding activity is "marking critical features", which means pointing out the most important features in the task or problem-solving process to the mentees. The fifth involves "frustration control", meaning the mentor helping the mentee make the learning process less stressful for the mentees. The last action is demonstration or modelling the solution to a task, showing the mentees what the ideal act or performance would be (Wood et al., 1976). This involves completion and explanation of a solution partially executed by the mentees themselves.

In addition to scaffolding, another key to supporting the mentee in their zone of proximal development is to aid in developing their self-efficacy. This refers to the mentee's belief in their own ability to succeed, which can be cultivated through vicarious experiences, observation, feedback, and previous experiences of mastery (Bandura, 1977). In practice this often means showing how something should be done before the mentee tries it themselves, giving encouragement and feedback upon failure or praise upon mastery. This can also involve helping them interpret failures as learning opportunities, by drawing on earlier experiences of mastery or focusing on what they did right as opposed to what they did wrong. It is important to remember that some forms of progress and mastery can show themselves very quickly, while in other cases it can take months before progress is apparent (Boyatzis, 2007). What is important to keep in mind then, is keeping track of the goals that have been set and the milestones that have been reached.

As the mentee feels mastery and can draw upon that experience when meeting new challenges, they may start to feel motivated by the possibility of succeeding. This means that they may become more comfortable viewing failures as learning opportunities, and in general will have more confidence in their own abilities to succeed (Bandura, 1977; Lillemyr, 2016). This motivation to approach success has been associated with well-being to a greater degree, and it is a good idea to help them maintain this motivation, though it is not unusual for it to wax and wane in the long run.

Every mentee is most likely going to have a different experience mastering new technologies and digital tools. This means that not all mentees are going to be equally comfortable with being challenged, however. If one is met with enough failure, it is not unusual to want to steer away from the possibility of failing in the future (Bandura, 1977; Lillemyr, 2016). This can be for many reasons; one is that failures can be attributed to one's own skill. For instance, whenever a mentee fails, they might gradually become more convinced that it is because of their own inadequacies. Feelings of inadequacy are not good for self-efficacy and might even lead to the mentee in question suspecting that others view them as inadequate, as those feelings of inadequacy start to become internalised (Bandura, 1977; Lillemyr, 2016).

Mentors who are met by a mentee who is more afraid to fail then they are motivated by success, may need to find tasks that are more easily achieved to build up their mentee's confidence (Bandura, 1977; Lillemyr, 2016). This will be required before giving them tasks that are more challenging. After a while the mentee can become more comfortable with their own skills after learning that failing is a part of learning and improving.

To set up a formal mentoring programme for an institution of higher learning involves finding what goals the mentoring should aim for and how that aligns with institutional needs. This can help determine what type of mentoring programme is the most appropriate, whether the mentoring should

purely be one-on-one mentorships or if something like peer mentoring or online mentoring would be more appropriate (Ambler, Cahir & Harvey, 2017).

4.2. Booklet as a tool for mentoring

This section will provide an example of what a mentoring case might look like and how the booklet might be used to support the mentor and mentee in this work.

The booklet is made as an instrument to support mentors in developing their mentees digital well-being. It can also be used to structure workshops and inform about how to improve one's own digital well-being. It consists of a **self-assessment tool** that guide the user to reflect about their current relationship to digital tools and technology in their work and personal lives. The booklet also consists of compact descriptions of what technostress and digital well-being is, as well as guidance and exercises on how to improve or maintain well-being.

The self-assessment tool is designed to help the user reflect and determine what areas of their digital well-being can be improved upon. It is comprised of three areas, that all include three levels. The areas represent an aspect of digital well-being, and the levels are meant to communicate to the user where they might need support, if they can manage but improve, or if they are capable and ready to support their colleagues. **Reflection prompts** are provided in the booklet to help the users place themselves on a level in each of the three areas.

Digital Competence can be understood as the confident, critical and responsible use of digital technologies for learning at work (Vuorikari, Kluzer & Punie, 2022). This means that if you have high digital competency, you can critically find, safely store and share data and technology to solve problems in your work.

Digital Social Support consists of the networks and peers a given individual has access to when in need of help and support in their work environment. Colleagues who have good social support share negative and positive experiences when working with technology, and overall contribute to making a supportive work environment (Cannon & Edmonson, 2005; Sjoblom, 2020).

Digital Mastery can be understood as the "perception of one's abilities to cope with the requirements of digital work (Busse, Busse, & Schumann, 2022)." This means that individuals who have high Digital Mastery will feel stronger self-efficacy, have stronger beliefs in their own abilities and will be less flustered by increased digitalisation or the introduction of new technologies in the work environment.

Level 1 individuals who find themselves at this level may experience that they struggle more than their peers when using technology at work. They only use the digital tools they must and need help understanding how to use the tools. In general, they struggle to use and are afraid of new technology.

Level 2 individuals who find themselves at this level may experience that they can handle the technical challenges of the everyday and feel comfortable solving simple problems with and using technology. For these individuals, new technologies can be stressful to adapt to, but they learn new skills and technologies when they need. In general, they know which tools are appropriate and how to use them.

Level 3 individuals who find themselves at this level may experience that they have an easier time using technological tools in the everyday and have an easier time picking up new technologies and skills. These individuals may find themselves helping their colleagues, and do not struggle as much adapting to new technologies and practices at work.

When reading we encourage you to engage with the example by thinking about how you might approach this mentee. It is encouraged to read over the learning theories again or go back to any part of the workbook for reminders on what digital well-being is and how it works. This is a very idealised circumstance, but the case is meant to illustrate how a mentoring relationship can be used to improve the individual's digital well-being by identifying problems, reducing stress, and encouraging mutual support.

EXAMPLE: HELPING ED THE MENTEE

Ed is an instructor/educator at your institution. He uses active learning classrooms (ALCs) and other digital tools in their day-to-day life and “I hate every minute of it!” he says. He describes technical equipment as “being uncooperative” and “typically doesn’t work”. This attitude leads him to feelings of dread associated with teaching or working with digital tools and equipment. Finally, Ed admits that he eventually finds solutions to his struggles with technology, but he feels little mastery and that his colleagues rarely step up to help him very much, this makes him feel alone with these struggles.

The mentor sets off time to meet Ed regularly to pin down where exactly he needs to improve. The mentor realizes that Ed’s descriptions of his struggles line up with descriptions of digital mastery and social support at level 1 even though he may be digitally competent at level 2. Using the booklet, the mentor and mentee can establish a shared language to define and talk about Ed’s struggles. Ed often struggles to communicate what his problems are, which makes helping him difficult for his colleagues. Ed can overcome a challenge, but he rarely feels mastery due to frustration and lack of recognition.

The mentor can now prepare tasks for Ed to improve his situation, now that the mentor knows what their mentee is struggling with. These tasks mostly involve learning how to identify problems and communicating them effectively, starting with more basic tasks before the more complex ones. Eventually Ed displays skills that suggests he is ready for more complex tasks, and thus require less direct help from the mentor.

To supply Ed with appropriate challenges, the mentor finds someone more skilled for Ed to spar with. This allows Ed and the more skilled partner, Henri, to develop their communication skills and digital competencies.

To find Henri, the mentor had to use the booklet to identify what a more digitally skilled person could be described as. Looking at digital competence, social support, and mastery at level 3, he found that Henri matched that description. Henri uses digital tools in his work every day and enjoys it because the technology lets “me excel at my work”, Henri also enjoy helping others use new tools because “in the long run, these tools can really improve how we all work!” In time and with instructions from the mentor, Henri can use the booklet to find a common ground with Ed, identify where they both may struggle, and how to overcome those struggles together.

4.3. Digital well-being e-course

Digital well-being online course is a tool to foster digital well-being. The course is designed to be completed independently by university teachers and does not require any additional support. However, it can also be integrated into the mentoring if necessary. In this way, individual units can be discussed in the mentoring session or the worksheets from the course can be used and reflected on together. For this reason, the didactic concept, structure, and content of the course are discussed here. The individual units are outlined so that mentors can get a picture of them and decide whether and how to use the course in mentoring.

Since the members of the target group are university teachers, they can also integrate parts of the online course or exercises or further material into their own teaching with students in order promote the digital well-being of students, discuss, and reflect on results together. Although the online course is designed sequentially, the information sheets, exercises and worksheets can also be used flexibly. They offer help with the concrete implementation of different techniques. Mentors can use the resources in different ways:

- Mentors can look for ideas to give suggestions.
- They can use the single online-course units to inform mentees about the theoretical background.
- They can select exercises to work them through with mentees, or even to set homework and discuss and reflect with the mentees. The exercises are formulated to be self-explanatory. This has the advantage that they can also be used outside of a mentoring programme. In a mentoring programme, it is advisable to introduce the information and exercises in advance, to discuss the purpose together and to reflect on the course of the exercises together.
- The online course can also be used in a group setting. Mentees can discuss and reflect together based on the individual results of the exercises.
- All materials can be used for a more in-depth discussion of the topic.

The course provides a set of tools for promoting digital well-being for the target group of university teachers. Thus, the course addresses the project objective: strengthening the well-being in the context of digital transformation by helping teachers to cope efficiently with techno-stressors to overcome digital fatigue and disengagement.

The course addresses the following questions: Is there anything we can do ourselves to feel more comfortable with online teaching, with screen work, to better cope with the stresses that online teaching brings? How do we stay calm when digital teaching demands a lot from us? What makes us feel satisfied? How do relationships succeed in digital teaching? How can individual potentials and strengths be promoted? How do people become more resilient? The course provides suggestions on how to remain relaxed and productive despite stress. In eight learning units, participants learn what constitutes digital well-being. The units support them with exercises and reflections to find out how participants can increase, maintain, and develop their digital well-being.

The guiding principles of (1) ease of access, (2) flexibility, and (3) continuity / sustainability after the end of the project is implemented as follows:

- The course should be made available to a broad target group. The course is usable in the sense of an Open Educational Resource (OER), it is linked via the Digital-Well-being-Project-website.
- No registration or similar is required. No data of the users are stored.
- The course allows for flexible, independent learning of the content (Czerwinski & Tasche, 2021). This means, for example, the exercises are available as worksheets.
- According to Clausen et al. (2023) an important barrier to join online courses is lack of time. Therefore, the course provides training in a short time frame. The scope will be based on the digital literacy courses described in Czerwinski and Tasche (2021).
- Keep the supervision of the course as low as possible. The course should be kept sustained over a longer period.

Eight units on Digital Well-being topics can be worked on for eight weeks, each at the start of the week in about 15 minutes. The exercises can then be “tried out” over the week. The units can also be worked on in a different way (e.g., every day for a week) or stretched out (every second week). The aim should be that the participants develop a kind of routine in which they integrate the work on the course units into their daily or weekly structure. Each unit begins with an introductory remark on the content and aim of the unit. Beyond the core content, each unit also links to in-depth information on external websites, e.g., videos with lectures. Each unit contains worksheets, exercises or even suggestions for self-reflection.

In the learning units, insights and exercises from resilience research and well-being therapy (e.g., Fava, 2016) are conveyed and applied to specifics of digital work in higher education. Based on findings from positive psychology (see for example Frederickson, 2004, 2013), “well-being happiness” (positive emotions and satisfaction) and “value happiness” (autonomy, sense of meaning, positive relationships, self-worth, competence, and personal growth; see for example Deci & Ryan, 2008; Ryff & Keyes, 1995) are promoted (cf. Hausler, 2022). The content structure is based on scientific models on the topic of well-being in general. In each module, the general aspects are then adapted to the specifics of digital work, digital collaboration in higher education teaching.

The units cover the following contents:

1. Introduction to digital well-being and positive psychology: The unit provides an insight what digital well-being is, and which role Positive Psychology plays, it offers a self-assessment to find out more about one’s own personal digital well-being. Finally, the unit show which topics are covered in the following units. On the foundation of general principles of positive psychology this unit looks at what digital well-being is, how technostress can affect digital well-being. The unit includes a self-assessment-tools as well as exercises like a strength inventory or a positive day review.

2. Advantages of positive feelings: This unit addresses the question of why it is important to promote positive feelings and to recognise positive aspects and frameworks in everyday situations. Experiencing positive feelings is a central building block for well-being. It is less about the intensity and more about the frequency. One effect of experiencing positive feelings is that our attention changes (see for example Broaden-and-Build-Theory, Frederickson, 2004). We discover new possibilities, develop confidence, are more creative. In this way we can build up more resources. In addition, the unit informs about the challenges of digital work (e.g., arising negative emotions, digitalisation anxiety or availability stress) as well as about tools that can help to develop positive emotions and thus increase digital well-being. The unit contains exercises how to focus more on the positive things, how to deal with oneself and negative emotions when they arise, or how to pay more attention to one’s own needs.

3. Positive feelings and mindfulness: Mindfulness is a form of attention in which we kindly perceive the present with all our senses without judging. Mindfulness is a basic attitude that is suitable for strengthening resilience. It helps to recognise and regulate feelings, reduces stress, and promotes positive emotions. Mindfulness plays a crucial role in (digital) well-being. Through mindfulness, however, we can develop a conscious approach to digital media and counteract stress factors. The unit looks at core elements of mindfulness (intention, attention, attitude, gratitude). It discusses mindfulness practice in the world of work and mindfulness in digital teaching. The unit includes exercises like a gratitude exercise that helps to consciously find a few moments each day to reflect on things you are grateful for and recognise the small joys or Mini-Detox-practices.

4. Long-term psychological well-being: This unit is about how we express our values in our actions and set appropriate goals or shape life so that it makes sense to us. This area includes positive relationships with oneself and others, self-determination or autonomy and a sense of meaning, as well as competence or self-efficacy (Bandura, 1977) and personal growth or resilience. Basis is the Self-Determination-Theory by Deci and Ryan (e.g., 2008) and the concept of psychological well-being by Ryff and Keyes (1995). The Self-Determination-Theory suggests that human motivation and well-being are influenced by the degree to which our basic psychological needs for autonomy, competence, and relatedness are met. Self-determination theory could be used

to explore how different forms of technology use may impact well-being by fulfilling or hindering these needs. The exercises included in this unit encourage to think about one's own values within digital work, the think about how to discover the meaning of activities and how to develop one's own abilities, and to reflect on one's own skills.

5. Autonomy and meaningfulness: Besides the need for closeness and connection, however, we also need distance, freedom, and scope for decision-making. The central questions are: What do I want? What do I not want? This means knowing needs, representing needs and setting limits, it needs the ability to deal with conflict. The unit presents some strategies to deal with difficult situations, they help to move from an attitude of powerlessness to one's own power and to keep inner control even when everything seems to collapse externally. This unit is about how we express our values in our actions and set appropriate goals or shape life so that it makes sense to us. The unit also specifically addresses challenges in digital teaching, such as experiencing loss of control in digital work due to flexibility, openness, accessibility, etc. It addresses the question how to regain autonomy and control. Furthermore, the unit explain some strategies for avoiding or reducing zoom fatigue. The exercises in this unit reflect on challenges, feelings of helplessness and being overwhelmed, and deal with the training of self-efficacy.

6. Positive relationships and self-acceptance: A basic human need is the need-to-belong (Baumeister & Leary, 1995). Humans need positive relationships. Positive relationships are characterised by respectful, trusting interaction. They give a sense of connection and belonging and are important sources of recognition, appreciation, understanding, support and importance. Digital teaching requires and enables a different way of forming working relationships between teachers and students. Information about students is only available via the learning management system, but at the same time more data may be available (datafication, learning analytics). The exercises in this unit address how to form and benefit from positive relationships (in a digital environment).

7. Competence and personal growth: To feel good, we need competence and personal growth. When we have the impression that we can influence our environment, that our actions make a difference, that we can choose and shape the environment, we feel high self-efficacy. When we look back on experiences of success, we are also more likely to expect that we will succeed again. It is central that we know our strength, values, and goals as precisely as possible. Especially when confronted with new tasks or with new demands in a (digital) work environment, the experience of competence suffers. The exercises in this unit ask how new requirements a frustrating effect do not have, but rather how the experience of competence can be promoted precisely through confrontation with new requirements.

> "
> RESILIENCE
> IS THE ABILITY
> TO RE-EVALUATE
> SITUATIONS AS
> **CHALLENGES AND OPPORTUNITIES FOR GROWTH.**

8. Conclusion: Pathways to resilience: Resilience is the ability to re-evaluate situations as challenges and opportunities for growth. It is not about denying or trivialising negative situations. Rather, it is about accepting the situation compassionately, using one's strengths, being able to cope with negative feelings, getting support when needed, re-developing oneself and being able to focus on positive aspects. Therefore, this unit serves as a kind of summary and addresses the training of resilience.

The online course contains complementary online resources like links to in-depth information on external websites, e.g., videos with lectures, are integrated as well other materials such as worksheets, the workbook, the booklet, a glossary, literature recommendations for in-depth discussion etc.

4.4. How was the mentoring program developed?

The creation of the mentoring program started with an assessment of the current situation in different universities through a quantitative survey that sought to understand which factors affected the digital well-being of the teaching staff in different countries.

After the survey the mentors were recruited in the participating universities. Some of these professionals had background in managing different types of intervention and training programs related to well-being, and some had done research on employee's well-being and technostress, some mentors had specific experience as e-learning coordinator or facilitator, and some did not have any specific expertise related to technology.

Before the face-to-face training of the mentors, the project staff organised an introductory meeting remotely with the mentors-to-be to gather preliminary wishes and expectations for the training. Challenges related to technology use in each university were also mapped. In addition, the participants were asked to read and comment the draft of this workbook as a background reading before the training session.

The three-day mentoring training took place in Helsinki in March 2023. The aims of the training were to share experiences about digital well-being methods in different countries and to acquire knowledge and skills to support colleagues in their digital pedagogical issues. The participants had opportunities to share experiences and to learn from each other.

The themes that were covered during the three-day training were well-being and digital well-being; technostress; research on well-being; mentoring; digitalisation in higher education institutions; sharing experiences on digitalisation; sharing good practices on digital well-being; and discussion on needs of the mentors-to-be. These themes of the training are further explored in this workbook.

After the training session held in Helsinki, the mentors were later contacted and asked to give feedback to develop to program further.

What kinds of challenges did the DIGIWELL mentors recognise on their campuses?

The mentors who participated in the training program were asked to describe challenges related to technology on their campuses. The problems mentioned were technology not working the way it was expected or students having difficulties using e-learning platforms; blurring of boundaries between work and private life; effects of notifications and messages to concentration and productivity at work and outside work; negative attitudes towards technology like technofright (what if it doesn't work?) and technoscepticism (it probably won't work) as well as resistance towards online teaching from the teaching staff and students more generally; employees not understanding the motivation behind using certain tools or systems; challenges in maintaining digital skills and capabilities; and practical difficulties and growing demands related to hybrid. Some also mentioned as a problem outdated or manual processes or practices that should be digitalised.

The collaborating universities also worked to establish a shared understanding of what the mentor and mentee's role and function are supposed to be. This was discussed both in general terms but also considering each institutions needs and context. The workshops included brainstorming sessions, group discussions and roleplay. Ideas and impressions of what makes a mentorship successful were shared. The consensus was that to be a successful mentor one needs to be open-minded, adaptive, patient and a good listener. These skills allow for a functional basis where the mentor can gather necessary information and build trust with the mentee before acting.

In another exercise, institutional needs and barriers were shared. The shared challenge for every institution was a concern surrounding time and resources. Another challenge for some institutions is that they lack a platform for mentoring that can initiate mentor-mentee pairing and resources to support their work. Other concerns that were mentioned were lack of ICT to support cooperation and lack support from leaders and adequate resources.

5

Summary

5 Summary

DIGIWELL project was born out of observed need to develop tools and methods to improve university teachers' well-being in relation to their work, technology, and digital transformation. The concept of digital well-being in this workbook refers to positive as well as negative effects of technology to an individual.

Digital transformation is a process that implies changes meant to increase efficiency of work at different levels: individual, organisational, and societal. It generates more competitivity, creates opportunities, but it also introduces disruptions. Use of digital technology can have an impact on people's health, well-being, life-work balance, and career choices. The necessity to adapt to technology is a two bladed sword – it promotes development and causes frustration and costs such as financial and personal.

In higher education, well-being of teachers and staff may be influenced by the pressure to constantly adjust to new technologies. Also new teaching requirements and competences increase demands in teaching. The hybrid educational model combines in-person learning with online education where students are responsible for their own learning has emerged. Specific digital competences should be developed both by students and professors for a better adaptation to today's society.

> MENTORING PROGRAMMES CAN BE USED AS AN **EFFECTIVE WAY OF ORGANISATIONAL CHANGE.**

Use of technology and digital tools impacts all aspects of well-being outlined by PERMA model (Seligman, 2011): Positive Emotion, Engagement, Relationships, Meaning, and Accomplishment. Well-being reflects how people subjectively think and feel about their life, what they have, and what happens to them. Another side of well-being in digital context is techno-stress (Tarafdar, Pullins & Ragu-Nathan, 2015) which consists of phenomena like techno-overload, techno-invasion, techno-complexity, techno-insecurity and techno-uncertainty. Higher education institutions could offer support to teachers and help to decrease technostress with the means of digital literacy facilitation (meaning support for being up to date), technical support provision, and involvement facilitation (so that no one is left alone).

Many causes of technostress can be traced back to structural issues and changes in society. Mentoring programmes can be used as an effective way of organisational change. To improve and maintain digital well-being at work is a collective effort and it cannot be achieved alone. For mentoring to work, formal mentoring programs should be aligned with a wider organisational strategy and goals of the institution.

List of References

Aktan, O., & Toraman, Ç. (2022). The relationship between Technostress levels and job satisfaction of Teachers within the COVID-19 period. *Education and Information Technologies, 27*(7), 10429–10453. https://doi.org/10.1007/s10639-022-11027-2

Ambler, T., Cahir, J., & Harvey, M. (2017). Spectrum Approach to Mentoring: an evidence-based approach tomentoring for academics working in higher education. *Teacher Development, 21*(1), 160–174. http://dx.doi.org/10.1080/13664530.2016.1210537

Asad, M. M., Erum, D., Churi, P., & Moreno Guerrero, A. J. (2023). Effect of technostress on Psychological well-being of post-graduate students: A perspective and correlational study of Higher Education Management. *International Journal of Information Management Data Insights, 3*(1), 100149. https://doi.org/10.1016/j.jjimei.2022.100149

Ayyagari, R., Grover, V., & Purvis, R. (2011). Technostress: Technological Antecedents and Implications. *MIS Quarterly 31*(4), 831–858. https://doi.org/10.2307/41409963

Bakker A. B., Demerouti, E., & Sanz-Vergel, A. I. (2014). Burnout and Work Engagement: The JD–R Approach. *The Annual Review of Organizational Psychology and Organizational Behavior, 1,* 389–411. https://doi.org/10.1146/annurev-orgpsych-031413-091235

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191–215. https://doi.org/10.1037/0033-295X.84.2.191

Baugh, S. G., & Fagenson-Eland, E. (2007). Formal Mentoring Programs. In B. R. Ragins & K. E. Kram (Eds.), *The handbook of mentoring at work: Theory, research, and practice* (pp. 499–518). Sage publications.

Bauman, Z. (2005). *Liquid life*. Polity.

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*(3), 497–529. https://doi.org/10.1037/0033-2909.117.3.497

Bloomberg, J. (2018). Digitization, digitalization and digital transformation. Confuse them at your peril. *Forbes*. https://www.forbes.com/sites/jasonbloomberg/2018/04/29/digitization-digitalisation-and-digital-transformation-confuse-them-at-your-peril/

Bond, M. & Bedenlier, S., (2019). Facilitating Student Engagement Through Educational Technology: Towards a Conceptual Framework. *Journal of Interactive Media in Education, 2019(*1), 1–14. DOI: 10.5334/jime.528

Bonfield, C. A., Salter, M., Longmuir, A., Benson, M., & Adachi, C. (2020). Transformation or evolution?: Education 4.0, teaching and learning in the digital age. *Higher Education Pedagogies, 5*(1), 223–246. https://doi.org/10.1080/23752696.2020.1816847

Bowlby, J. (2011). *A Secure Base. Clinical applications of attachment theory.* Trei.

Boyatzis, R. E. (2007). Mentoring for intentio In B. R. Ragins & K. E. Kram (Eds.), *The handbook of mentoring at work: Theory, research, and practice* (pp. 499–518). Sage publications.

Brennen, S. J., & Kreiss, D. (2016). Digitalization. In K.B. Jensen, R.T. Craig, J.D. Pooley, E.W. Rothenbuhler (Eds.), *The International Encyclopedia of Communication Theory and Philosophy* (pp. 1–11). John Wiley & Sons.

Büchi, M. (2021). Digital well-being theory and research. *New Media & Society 26*(1), 172–189. https://doi.org/10.1177/14614448211056851

Busse, J., Busse, R., & Schumann, M. (2022). Does Technology Matter? How Digital Self-Efficacy Affects the Relationship between ICT Exposure and Job Dissatisfaction. *Proceedings of the 55th Hawaii International Conference on System Sciences,* 6260–6269. http://hdl.handle.net/10125/80099

Campisi, J., Bynog, P., McGehee, H., Oakland, J.C., Quirk, S., Taga, C., & Taylor, M. (2012). Facebook, Stress, and Incidence of Upper Respiratory Infection in Undergraduate College Students. *Cyberpsychology, Behavior, and Social Networking, 15*(12), 675–681. http://doi.org/10.1089/cyber.2012.0156

Cannon, M., & Edmonson, A. C. (2005). Failing to Learn and Learning to Fail (Intelligently): How Great Organizations Put Failure to Work to Innovate and Improve. *Long Range Planning, 38,* 299–319. https://doi.org/10.1016/j.lrp.2005.04.005

Cesco, S., Zara, V., De Toni, A. F., Lugli, P., Betta, G., Evans, A. C., & Orzes, G. (2021). Higher education in the first year of COVID-19: Thoughts and perspectives for the future. *International Journal of Higher Education, 10*(3), 285–294. DOI: 10.5430/ijhe.v10n3p285

Chinnasamy, J. (2013). Mentoring and Adult Learning: Andragogy in Action. *International Journal of Management Research and Reviews, 3*(5). 2835–2844.

Christensen, R., & Knezek, G. (2008). Self-report measures and findings for information technology attitudes and competencies. In J. Voogt, & G. Knezek (eds.), *International Handbook of Information Technology in Primary and Secondary Education* (pp. 349–365). Springer Science + Business Media.

Clausen, S., Braun, L. M., & Stieglitz, S. (2023). Towards More Digital Wellbeing in Knowledge Work-A Signaling Theory Perspective. *Proceedings of the 56th Hawaii Conference on System Sciences,* 4598–4607. https://hdl.handle.net/10125/103193

Cleveland-Innes, M., & Wilton, D. (2018). *Guide to blended learning.* Burnaby, Columbia: Commonwealth of learning.

Czerwinski, S., & Tasche, T. (2021). Aufbau und Konzeption von Selbstlernkursen zu digitalen Kompetenzen. [Structure and conception of self-study courses on digital competencies.] *Bibliothek Forschung und Praxis, 45*(2), 351–356. https://doi.org/10.1515/bfp-2020-0102

Davis, J., Balda, M., Rock, D., McGinniss, P. & Davachi, L. (2014). The science of making learning stick: An update to the AGES model. *NeuroLeadershiop Journal, 5,* 1–15. https://www.creativedgetraining.co.uk/wp-content/uploads/2015/07/The-Science-of-Making-Learning-Stick-AGES-Model.pdf

Deci, E. L., & Ryan, R. M. (2000). The ”what” and” why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological inquiry, 11*(4), 227–268. DOI: 10.1207/S15327965PLI1104_01

Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macrotheory of human motivation, development, and health. *Canadian Psychology / Psychologie canadienne, 49*(3), 182–185. https://doi.org/10.1037/a0012801

Denham, S. A. (2007). Dealing with feelings: How children negotiate the worlds of emotions and social relationships. *Cognition, Brain and Behavior, 11*(1), 1–48.

Dewett, T. (2007). Linking intrinsic motivation, risk taking, and employee creativity in an R&D environment. *R&D Management, 37*(3), 197–208. https://doi.org/10.1111/j.1467-9310.2007.00469.x

Diener, E. (1984). Subjective well-being. *Psychological Bulletin, 95*(3), 542 –575. https://doi.org/10.1037/0033-2909.95.3.542

Diener, E., & Biswas-Diener, R. (2008). *Happiness: Unlocking the mysteries of psychological wealth.* Blackwell Publishing. https://doi.org/10.1002/9781444305159

Diener, E., Oishi, S., & Lucas, R. E. (2003). Personality, culture, and subjective well-being: Emotional and cognitive evaluations of life. *Annual Review of Psychology, 54,* 403–425. https://doi.org/10.1146/annurev.psych.54.101601.145056

Diener, E., Pressman, S. D., Hunter, J., & Delgadillo-Chase, D. (2017). If, Why, and When Subjective Well-Being Influences Health, and Future Needed Research. *Applied Psychology: Health and Well-Being, 9(*2), 133–167.

Dunaetz, D. R. (2022). When Technology Does More Harm than Good: Technostress in Missionary Contexts. *Journal of the Evangelical Missiological Society, 2*(1), 112–128. https://orcid.org/0000-0003-0991-897X

Finnish government (2021) E*ducation Policy Report of the Finnish Government.* http://urn.fi/URN:ISBN:978-952-383-927-4

Ertmer, P. A., Ottenbreit-Leftwich, A. T., Sadik, O., Sendurur, E., & Sendurur, P. (2012). Teacher beliefs and technology integration practices: A critical relationship. *Computers & Education, 59*(2), 423–435.

European Commission (2018). *Key Competences for LifeLong Learning.* https://data.consilium.europa.eu/doc/document/ST-5464-2018-ADD-2/EN/pdf

Fava, G. A. (2016). *Well-being Therapy. Treatment manual and clinical applications.* Karger.

Fraley, R. C., & Shaver, P. R. (2000). Adult romantic attachment: theoretical developments, emerging controversies, and unanswered questions. *Review of General Psychology, 4,* 132–154.

Fredrickson, B. L. (2004). The broaden-and-build theory of positive emotions. Philosophical Transactions of the Royal Society of London. *Series B, Biological Sciences, 359*(1449), 1367–1378.

Fredrickson, B. L. (2013). Positive emotions broaden and build. *Advances in Experimental Social Psychology, 47,* 1–53.

Fűzi, B., Géring, Z., & Szendrei-Pál, E. (2022). Changing expectations related to digitalisation and socialisation in higher education. Horizon scanning of pre- and post-COVID-19 discourses. *Educational Review, 74*(3), 484–516. https://doi.org/10.1080/00131911.2021.2023101

Gibb, A. (2002). Creating conducive environments for learning and entrepreneurship: living with, dealing with, creating, and enjoying uncertainty and complexity. *Industry and Higher Education, 16*(3), 135–148.

Gnaur, D., Hindhede, A. L., & Andersen, V. H. (2020). Towards hybrid learning in higher education in the wake of the COVID-19 crisis. *Proceedings of the 19th European Conference on e-Learning, ECEL 2020* (pp. 205–211). Academic Conferences and Publishing International.

Goldberg, S. (2000). *Attachment and Development.* Arnold.

Gray, J., & Rumpe, B. (2015). Models for digitalization. *Software and Systems Modeling, 14* (4), 1319–1320. https://doi.org/10.1007/s10270-015-0494-9

Hakanen, J. (2018). *Työn imu.* Työterveyslaitos. https://www.julkari.fi/bitstream/handle/10024/136798/9789522618276-TTL_tyonimu.pdf?sequence=1&isAllowed=y

Hale, R. (2000). To match or mis-match? The dynamics of mentoring as a route to personal and organisational learning. *Career development international, 5,* 223–234. https://doi.org/10.1108/EUM0000000005360

Hattie, J. & Yates. G.R. (2014). *Visible Learning and the Science of How We Learn.* Routledge.

Hauk, N., Hüffmeier, J., & Krumm, S. (2018). Ready to be a Silver Surfer? A Meta-analysis on the Relationship Between Chronological Age and Technology Acceptance. *Computers in Human Behavior, 84,* 304–319. https://doi.org/10.1016/j.chb.2018.01.020

Hausler, M. (2022). *Therapie-Tools. Wohlbefindenstherapie.* [Therapy tools. Well-being therapy.] Beltz.

Hawley, S.R., Thrivikraman, J. K., Noveck, N., Romain, T.S., Ludy, M. J., Barnhart, L., Chee, W.S., Cho, M.J., Chong, M.H., Du, C., & Fenton, J.I. (2021). Concerns of college students during the COVID-19 pandemic: Thematic perspectives from the United States, Asia, and Europe. *Journal of Applied Learning and Teaching, 4*(1) 11–20. https://doi.org/10.37074/jalt.2021.4.1.10

Heinze, A., & Procter, C. (2004). *Reflections on the use of Blended Learning.* University of Salford. http://usir.salford.ac.uk/1658/1/4247745025H__CP_-_paper9_5.pdf

Henrie, C. R., Halverson, L. R., & Graham, C. R. (2015). Measuring student engagement in technology-mediated learning: A review. *Computers & Education, 90,* 36–53. https://doi.org/10.1016/j.compedu.2015.09.005

Howard, S. K., & Mozejko, A. (2021). Teachers: Technology, change and resistance. In M. Henderson & G. R. Frontmatter (Eds.), *Teaching and digital technologies* (pp. 307–317). Cambridge University Press. https://doi.org/10.1017/CBO9781316091968.030

Kahu, E. R., & Nelson, K. (2018). Student engagement in the educational interface: understanding the mechanisms of student success. *Higher education research & development, 37*(1), 58–71. https://doi.org/10.1080/07294360.2017.1344197

Kalbfleisch, P. J. (2007). Mentoring enactment theory. In B. R. Ragins & K. E. Kram (eds.), *The handbook of mentoring at work: Theory, research, and practice.* (pp. 499–518). Sage publications.

Kangas, M., & Ruokamo, H. (2012). Playful Learning Environment(s). In N. M. Seel (Ed.). *Encyclopedia of the Sciences of Learning.* (Vol. 1, pp. 2653–2655). Springer.

Kaparounaki, C. K., Patsali, M. E., Mousa, D. P. V., Papadopoulou, E. V., Papadopoulou, K. K., & Fountoulakis, K. N. (2020). University students' mental health amidst the COVID-19 quarantine in Greece. *Psychiatry research, 290,* 113111. https://doi.org/10.1016/j.psychres.2020.113111

Kjelstad, A. B., & Ytterdal, M. (2022). *Ung klimaledelse Casestudie om medvirkning i et ungdomsråd.* DUO. https://www.duo.uio.no/handle/10852/96876

Klesel, M., Narjes, N., & Niehaves, B. (2018). Conceptualizing IT Resilience: An Explorative Approach. *Multikonferenz Wirtschaftsinformatik,* 1008–1019.

Klinge, C. M. (2015). A Conceptual Framework for Mentoring in a Learning Organization. *Adult learning, 26*(4). 160–166. https://doi.org/10.1177/1045159515594154

Knowles, M. S. (1984) *Andragogy in Action.* Jossey-Bass.

Kraus, S., Jones, P., Kailer, N., Weinmann, A., Chaparro-Banegas, N., & Roig-Tierno, N. (2021). Digital Transformation: An Overview of the Current State of the Art of Research. *SAGE Open, 11*(3), 1–15. https://doi.org/10.1177/21582440211047576

Kryzhanovskij, O. A., Baburina, N. A., & Ljovkina, A. O. (2021). How to make digitalization better serve an increasing quality of life? *Sustainability (Switzerland), 13*(2), 1–11. https://doi.org/10.3390/su13020611

Legner, C., Eymann, T., Hess, T., Matt, C., Böhmann, T., Drews, P., Mädche, A., Urbach, N., & Ahlemann, F. (2017). Digitalization: Opportunity and Challenge for the Business and Information Systems Engineering Community. *Business and Information Systems Engineering, 59*(4), 301–308. https://doi.org/10.1007/s12599-017-0484-2

Licoppe, C., & Smoreda, Z. (2005). Are social networks technologically embedded? How networks are changing today with changes in communication technology. *Social Networks, 27*(4), 317–335. https://doi.org/10.1016/j.socnet.2004.11.001

Lillejord S., Børte K., Nesje K., & Ruud E. (2017). *Campusutforming for undervisning, forskning, samarbeid og læring – en systematisk kunnskapsoversikt.* Kunnskapssenter for utdanning.

Lillemyr, O. F. (2016). *Motivasjon og selvforståelse.* Universitetsforlaget.

Lonka. K. (2020). *Oivaltava oppiminen* [Innovative Learning]. Otava.

Lund, A., Furberg, A., Bakken, J., & Engelien, K. L. (2014). What does professional digital competence mean in teacher education?. *Nordic Journal of Digital Literacy, 9*(4), 280–298.

Luthans, F., Avolio, B.J., Avey, J.B., & Norman, S.M. (2007). Positive Psychological Capital: Measurement and Relationship with Performance and Satisfaction. *Personnel Psychology. 60,* 541–572. https://doi.org/10.1111/j.1744-6570.2007.00083.x

Lyubomirsky, S. (2013). *The myths of happiness: what should make you happy but doesn't, what shouldn't make you happy but does.* Penguin Press.

Lyubomirsky, S., & Dickerhoof, R. (2010). A construal approach to increasing happiness. In J. E. Maddux & J. P. Tangney (Eds.), *Social psychological foundations of clinical psychology* (pp. 229–244). The Guilford Press.

Lyubomirsky, S., King, L., & Diener, E. (2005). The Benefits of Frequent Positive Affect: Does Happiness Lead to Success? *Psychological Bulletin, 131*(6), 803–855. https://doi.org/10.1037/0033-2909.131.6.803

Maddux, J. E. (2018). Subjective well-being and life satisfaction: An introduction to conceptions, theories, and measures. In J. E. Maddux (Ed.), *Subjective well-being and life satisfaction* (pp. 3–31). Routledge/Taylor & Francis Group. https://doi.org/10.4324/9781351231879-1

Maican, C. I., Cazan, A. M., Lixandroiu, R. C., & Dovleac, L. (2019). A study on academic staff personality and technology acceptance: The case of communication and collaboration applications. *Computers & Education, 128,* 113–131. https://doi.org/10.1016/j.compedu.2018.09.010

Martin, A. (2006). A european framework for digital literacy. *Nordic Journal of Digital Literacy, 1*(2), 151–161. https://doi.org/10.18261/ISSN1891-943X-2006-02-06

Mauss, I. B., Bunge, S. A., & Gross, J. J. (2007). Automatic emotion regulation. *Social and Personality Psychology Compass, 1,* 1–22. https://doi.org/10.1111/j.1751-9004.2007.00005.x

McGowan, E. M., Stone, E. M., & Kegan, R. (2007). A constructive-deelopmental approach to mentoring relationships. In B. R. Ragins & K. E. Kram (Eds.), *The handbook of mentoring at work: Theory, research, and practice.* (pp. 499–518). Sage publications.

Mikulincer, M, & Shaver, P. R. (2019). Attachment orientations and emotion regulation. *Current opinion in psychology, 25,* 6–10.

Mikulincer, M., & Shaver, P. R. (2016). Adult attachment and emotion regulation. In J. Cassidy, & P. R. Shaver (eds.). *Handbook of Attachment: Theory, Research and Clinical Applications* (pp. 507–533). New York: Guilford Press. https://doi.org/10.1016/j.copsyc.2018.02.006

Naragon-Gainey, K., McMahon, T. P., & Chacko, T. P. (2017). The structure of common emotion regulation strategies: A meta-analytic examination. *Psychological Bulletin, 143*(4), 384–427. https://doi.org/10.1037/bul0000093

Nikou, S., & Aavakare, M. (2021). An assessment of the interplay between literacy and digital Technology in Higher Education. *Education and Information Technologies, 26*(4), 3893–3915. https://doi.org/10.1007/s10639-021-10451-0

Nkomo, L. M., Daniel, B. K., & Butson, R. J. (2021). Synthesis of student engagement with digital technologies: a systematic review of the literature. *International Journal of Educational Technology in Higher Education, 18*(1), 1–26. https://doi.org/10.1186/s41239-021-00270-1

Núñez-Canal, M., de Obesso, M. D. L. M., & Pérez-Rivero, C. A. (2022). New challenges in higher education: A study of the digital competence of educators in Covid times. *Technological Forecasting and Social Change, 174,* 121270. https://doi.org/10.1016/j.techfore.2021.121270

Nurhas, I., Aditya, B. R., Jacob, D.W., & Pawlowski, J.M. (2022). Understanding the challenges of rapid digital transformation: the case of COVID-19 pandemic in higher education. *Behaviour & Information Technology, 41*(13), 2924–2940. https://doi.org/10.1080/0144929X.2021.1962977

OSH Pulse (2022). Occupational safety and health in post-pandemic workplaces. https://osha.europa.eu/en/publications/osh-pulse-occupational-safety-and-health-post-pandemic-workplaces

Parviainen, P., Tihinen, M., Kääriäinen, J., & Teppola, S. (2017). Tackling the digitalization challenge: How to benefit from digitalization in practice. *International Journal of Information Systems and Project Management, 5*(1), 63–77. https://doi.org/10.12821/ijispm050104

Pfaffinger, K. F., Reif, J. A. M., Spieß, E., & Berger, R. (2020). Anxiety in a digitalised work environment. *Organisation. Zeitschrift Für Angewandte Organisationspsychologie, 51*(1), 25–35. https://doi.org/10.1007/s11612-020-00502-4

Plekhanov, D., Franke, H., & Netland, T. H. (2023). Digital transformation: A review and research agenda. *European Management Journal 41*(6), 821–844. https://doi.org/10.1016/j.emj.2022.09.007

Portillo, J., Garay, U., Tejada, E., & Bilbao, N. (2020). Self-perception of the digital competence of educators during the COVID-19 pandemic: A cross-analysis of different educational stages. *Sustainability, 12*(23), 10128. https://doi.org/10.3390/su122310128

Prior, D. D., Mazanov, J., Meacheam, D., Heaslip, G., & Hanson, J. (2016). Attitude, digital literacy and self efficacy: Flow-on effects for online learning behavior. *The Internet and Higher Education, 29,* 91–97. https://doi.org/10.1016/j.iheduc.2016.01.001

Qi, C. (2019). A double-edged sword? Exploring the impact of students' academic usage of mobile devices on technostress and academic performance. *Behaviour and Information Technology, 38*(12), 1337–1354. https://doi.org/10.1080/0144929X.2019.1585476

Ragu-Nathan, T. S., Tarafdar, M., Ragu-Nathan, B. S., & Tu, Q. (2008). *The consequences of technostress for end users in organizations: Conceptual development and validation. Information Systems Research, 19*(4), 417–433. https://doi.org/10.1287/isre.1070.0165

Ramírez Anormaliza, R. I., Sabaté i Garriga, F., & Guevara Viejo, F. (2015). Evaluating student acceptance level of e-learning systems. *ICERI2015: Proceedings 8th International Conference of Education, Research and Innovation November 16th–18th, 2015-Seville, Spain.* (pp. 2393–2399). International Association of Technology, Education and Development (IATED).

Reif, J. A. M., Spieß, E., & Pfaffinger, K. F. (2021). *Dealing with Stress in a Modern Work Environment*. Springer International Publishing. https://doi.org/10.1007/978-3-030-58498-6

Reis, J., Amorim, M., Melão, N., Cohen, Y., & Rodrigues, M. (2020). Digitalization: A Literature Review and Research Agenda. *In Lecture Notes on Multidisciplinary Industrial Engineering: Vol. Part F201* (pp. 443–456). Springer Nature. https://doi.org/10.1007/978-3-030-43616-2_47

Riedl, R. (2013). On the Biology of Technostress: Literature Review and Research Agenda. *The DATA BASE for Advances in Information Systems, 44,* 18–55. https://doi.org/10.1145/2436239.2436242

Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemporary educational psychology, 61,* 101860. https://doi.org/10.1016/j.cedpsych.2020.101860

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology, 57*(6), 1069–1081. https://doi.org/10.1037/0022-3514.57.6.1069

Ryff, C. D. (2014). Psychological Well-Being Revisited: Advances in the Science and Practice of Eudaimonia. *Psychotherapy and Psychosomatics, 83,* 10–28. https://doi.org/10.1159/000353263

Ryff, C. D., & Keyes, C. L. (1995). The Structure of Psychological Well-Being Revisted. *Journal of Personality and Social Psychology, 69*(4), 719–727. https://doi.org/10.1037/0022-3514.69.4.719

Sälsjö, R. (2006). *Læring og kulturelle redskaper. Om læringsprosesser og den kollektive hukommelsen.* J.W Cappelens Forlag AS.

Scherer, R., & Teo, T. (2019). Unpacking teachers' intentions to integrate technology: A meta-analysis. *Educational Research Review, 27,* 90–109. https://doi.org/10.1016/J.EDUREV.2019.03.001

Seligman, M. E. P. (2011). *Flourish: A visionary new understanding of happiness and well-being.* Free Press.

Sharma, S., & Sharma, S. K. (2016). Team resilience: Scale development and validation. Vision: *The Journal of Business Perspective. 20*(1), 37–53. https://doi.org/10.1177/09722629166289

Shaver, P. R., & Mikulincer, M. (2002). Attachment-related psychodynamics. *Attachment & Human Development, 4*(2), 133–161. https://doi.org/10.1080/14616730210154171

Siegel, D. J. (2014). *The Power and Purpose of the Teenage Brain.* Herald.

Siemens, G., Gasevic, D., & Dawson, S. (2015). *Preparing for the digital university: a review of the history and current state of distance, blended, and online learning.* MOOC Research Initiative.

Sjöblom, K. (2020). *Flourishing in 21st century workplaces: how to spport knowledge workers' productivity and well-being in modern environments.* [Doctoral Dissertation, University of Helsinki]. https://helda.helsinki.fi/server/api/core/bitstreams/516148bb-9f79-4254-83eb-6f55eb4d34eb/content

Sjöblom, K., Mälkki, K., Sandström, N., & Lonka, K. (2016). Does Physical Environment Contribute to Basic Psychological Needs? A Self-Determination Theory Perspective on Learning in the Chemistry Laboratory. *Frontline Learning Research, 4*(1), 17–39. DOI: 10.14786/flr.v4i1.217

Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The Brief Resilience Scale: Assessing the Ability to Bounce Back. *International Journal of Behavioral Medicine, 15,* 194–200.

SoLAR (2022). *What is Learning Analytics?* https://www.solaresearch.org/about/what-is-learning-analytics/

Staker, H., & Horn, M. B. (2012, May). *Classifying K–12 Blended learning*. Christensen Institute. https://www.christenseninstitute.org/wp-content/uploads/2013/04/Classifying-K-12-blended-learning.pdf

Staniec, I., Kaczorowska-Spychalska, D., Kalinska-Kula, M., & Szczygiel, N. (2022). The Study of Emotional Effects of Digitalised Work: The Case of Higher Education in the Sustainable Development. *International Journal of Environmental Research and Public Health, 19*(1), 576. https://doi.org/10.3390/ijerph19010576

Steele, R. G., Hall, J. A., & Christofferson, J. L. (2020). Conceptualizing Digital Stress in Adolescents and Young Adults: Toward the Development of an Empirically Based Model. *Clinical Child and Family Psychology Review, 23*(1), 15–26. https://doi.org/10.1007/s10567-019-00300-5

Schwab, K. (2017). *The fourth industrial revolution.* Currency.

Tarafdar, M., Cooper, C. L., & Stich, J. F. (2019). The technostress trifecta – techno eustress, techno distress and design: Theoretical directions and an agenda for research. *Information Systems Journal, 29*(1), 6–42. https://doi.org/10.1111/isj.12169

Tarafdar, M., Pullins, E. B., & Ragu-Nathan, T. S. (2015). Technostress: Negative effect on performance and possible mitigations. *Information Systems Journal, 25*(2), 103–132. https://doi.org/10.1111/isj.12042

Tarafdar, M., Tu, Q., Ragu-Nathan, T. S., & Ragu-Nathan, B. S. (2011). Crossing to the dark side: Examining creators, outcomes, and inhibitors of technostress. *Communications of the ACM, 54*(9), 113–120. https://doi.org/10.1145/1995376.1995403

Tirronen, J. (2020). Länsimaisen yliopistolaitoksen historiallinen kehitys [The historical development of the Western university]. In V. Kohtamäki, E. Pekkola, & J. Kivistö (Eds.), *Korkeakouluhallinto — Johtaminen, talous ja politiikka* [Higher education administration – Management, economy and policies] (pp. 39–71). Gaudeamus.

Tømte, C. E., Fossland, T., Aamodt, P. O., & Degn, L. (2019). Digitalisation in higher education: mapping institutional approaches for teaching and learning. *Quality in Higher Education, 25*(1), 98–114. https://doi.org/10.1080/13538322.2019.1603611

Truța, C., Maican, C. I., Cazan, A. M., Lixăndroiu, R. C., Dovleac, L., & Maican, M. A. (2023). Always connected @ work. Technostress and well-being with academics. *Computers in Human Behavior, 143,* 107675. https://doi.org/10.1016/j.chb.2023.107675

UNESCO (2020). *COVID-19 Education Response: Survey on National Education Responses to COVID-19 School Closures.* https://covid19.uis.unesco.org/school-closures-survey/

Upadhyaya, P., & Vrinda. (2021). Impact of technostress on academic productivity of university students. *Education and Information Technologies, 26*(2), 1647–1664. https://doi.org/10.1007/s10639-020-10319-9

Vanden Abeele, M. M. P. (2021). Digital Wellbeing as a Dynamic Construct. *Communication Theory, 31*(4), 932–955. https://doi.org/10.1093/ct/qtaa024

Venkatesh, V., Smith, R. H., Morris, M. G., Davis, G. B., Davis, F. D., & Walton, S. M. (2003). User acceptance of information technology: toward a unified view. *MIS Quarterly, 27*(3), 425–478. https://doi.org/10.2307/30036540

Voss, R., & Gruber, T. (2006). The desired teaching qualities of lecturers in higher education: a means end analysis. *Quality Assurance in Education, 14*(3), 217–242. https://doi.org/10.1108/09684880610678540

Vuorikari, R., & Kluzer, S., & Punie, Y. (2022). *The Digital Competence Framework for Citizens – With new examples of knowledge, skills and attitudes.* Publications Office of the European Union. JRC Publications Repository – DigComp 2.2: The Digital Competence Framework for Citizens – With new examples of knowledge, skills and attitudes https://europa.eu

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes.* Harvard University Press.

Voorberg, W. H., Bekkers, J. J. M. & Tummers, L. G. (2015) A Systematic Review of Co-Creation and Co-Production: Embarking on the social innovation journey. *Public Management Review*, 17(9), 1333–1357. https://doi.org/10.1080/14719037.2014.930505

Wakkee, I., van der Sijde, P., Vaupell, C., & Ghuman, K. (2019). The university's role in sustainable development: Activating entrepreneurial scholars as agents of change. *Technological Forecasting and Social Change, 141,* 195–205.

Wang, K., Shu, Q., & Tu, Q. (2008). Technostress under different organizational environments: An empirical investigation. *Computers in Human Behavior, 24*(6), 3002–3013. https://doi.org/10.1016/j.chb.2008.05.007

Warr, M., & Mishra, P. (2021). Integrating the discourse on teachers and design: An analysis of ten years of scholarship. *Teaching and Teacher Education, 99,* 103274. https://doi.org/10.1016/j.tate.2020.103274

Wasson, B., Kirschner, P.A. (2020). Learning Design: European Approaches. *TechTrends, 64,* 817–827. https://doi.org/10.1007/s11528-020-00498-0

Weiser, E.B. (2014). Stress, lifestyle and health. In Psychology, OpenStax College. In R. M. Spielman, K. Dumper, W. Jenkins, A. Lacombe, M. Lovett, M. Perlmutter (eds.), *Psychology* (pp. 495–546). OpenStax College. http://cnx.org/content/col11629/latest

Wilson, H. K & Cotgrave, A. (2016). Factors that influence students' satisfaction with their physical learning environments. *Structural Survey, 34*(3), 256–275. https://doi.org/10.1108/SS-01-2016-0004

Wilson, M. L., Ritzhaupt, A. D., & Cheng, L. (2020). The impact of teacher education courses for technology integration on pre-service teacher knowledge: A meta-analysis study. *Computers & Education, 156,* 103941. https://doi.org/10.1016/J.COMPEDU.2020.103941

Windle, G. (2011). What is Resilience? A Review and Concept Analysis. *Reviews in Clinical Gerontology, 21,* 152–169. https://doi.org/10.1017/S0959259810000420

Winwood, P.C., Colon, R., & McEwen, K. (2013). A Practical Measure of Workplace Resilience: Developing the Resilience at Work Scale. *Journal of Occupational and Environmental Medicine, 55*, 1205–1212. DOI: 10.1097/JOM.0b013e3182a2a60a

Wiseman, P., Kennedy, G., & Lodge, J. (2016). Models for understanding student engagement in digital learning environments. *Proceedings of Ascilite 2016, Show Me The Learning,* Adelaide, November 27–30, 666–671.

Wood, D., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem solving. *Child psychology, 17*, 89–100.

World economic forum (2016). The Fourth Industrial Revolution: what it means, how to respond. https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/

Zimmerman, J. (2020). Coronavirus and the great online-learning experiment. *Chronicle of Higher Education, 10*(3), 28. https://www.chronicle.com/article/coronavirus-and-the-great-online-learning-experiment/

ISBN 978-606-37-2174-8